

Influence of Basic School Teachers' Knowledge, Academic Qualifications and Teaching Experience on Learner-Centered Pedagogical Approaches Use in Hohoe, Ghana

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Abstract

Despite Ghana's policy shift towards learner-centered and inclusive pedagogical reforms, evidence shows that classroom implementation remains uneven across basic schools. This study examined how teachers' knowledge, academic qualifications and teaching experience influence the use of learner-centered pedagogical approaches in public basic schools in Hohoe, Ghana. The study focused on five dimensions of learner-centered pedagogy: constructivist, collaborative, inquiry-based, integrative and reflective approaches. Anchored in the positivist paradigm, a descriptive survey design was employed. A census sampling strategy was used to involve all 364 teachers from 28 public basic schools. Data was collected using a structured five-point Likert-scale questionnaire and analyzed using descriptive statistics and Multivariate Analysis of Variance (MANOVA). Results indicate that teachers demonstrate relatively strong conceptual knowledge of learner-centered pedagogies; however, this knowledge appears predominantly theoretical and does not consistently translate into classroom practice due to contextual and systemic constraints. Teachers' perceptions of learner-centered pedagogy did not differ significantly across categories of teaching experience or academic qualification, suggesting broadly shared orientations toward learner-centered instruction. The study underscores the need for sustained, practice-oriented professional development supported by instructional leadership, collaborative planning structures and enabling school conditions to strengthen effective enactment of learner-centered pedagogies in Ghanaian basic schools.

Keywords: Basic schools; learner-centered pedagogy; teacher knowledge; teaching experience; academic qualifications.

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Introduction

The quality of foundational education is significantly shaped by pedagogical practices employed by teachers (Rrustemi & Kurteshi, 2023). While there has been a global shift from teacher-centered to learner-centered pedagogies (LCPs), the extent to which this shift has translated into meaningful classroom practice remains uneven. LCPs, grounded in constructivist assumptions, emphasizes learner agency, collaboration and critical inquiry (Sakata et al., 2022; George & Mthethwa, 2025). However, the application of these principles presupposes that

teachers possess the professional knowledge, skills and beliefs necessary to sustain such environments, which may not always be the case.

In Ghana, recent curriculum reforms, particularly the standards-based and competency-based frameworks, strongly promote learner-centered and inclusive classroom practices (Joyce, 2023; Aziabah, 2017). These reforms envision teachers designing learning experiences that accommodate diverse learner needs and promote active participation. However, this expectation may be overly optimistic if teachers' understandings of learner-centered and

inclusive pedagogies are limited or if their classroom realities do not support such practices. The practical implementation of Inclusive Education (IE) ultimately depends on how teachers interpret and enact pedagogical reforms in their day-to-day instructional practices.

Despite progressive policy directives, studies continue to show a persistent reliance on teacher-centered pedagogies in Ghanaian basic schools, often characterized by lectures and rote memorization (Osman, 2020). This trend suggests that policy reform alone does not guarantee pedagogical transformation. Teachers' instructional choices are influenced by their professional training, beliefs about learning, classroom conditions and perceived expectations of the education system (Heinonen et al., 2023; Johnston, 2024). Although some studies have found that teachers' qualifications and teaching experience can influence their openness to learner-centered practice (Danijela, 2018; Meschede et al., 2017), these findings are inconsistent and context-dependent.

Moreover, systemic barriers, such as large class sizes, inadequate teaching resources, limited professional development and dominance of high-stakes examinations continue to inhibit the effective implementation of LCPs (Awuah, 2024; Sulley, 2018). These challenges point to the need to move beyond national policy narratives and examine how teachers understand and interpret learner-centered pedagogies in the school settings.

Within the Hohoe township in Ghana, empirical evidence on how basic school teachers conceptualize learner-centred and inclusive pedagogies, and how their teaching experience and professional qualifications shape pedagogical decision-making in classroom practice, remains limited. This gap was identified through critical review of Ghana-based studies on learner-centered and inclusive education, which predominantly examined national policy implementation, teachers' general attitudes or large-scale regional samples, with minimal attention to township-level or municipality-specific contexts (Agbenyega, 2007; Kuyini & Desai, 2007). Existing Ghanaian research has further tended to emphasize access, policy compliance and structural constraints rather than teachers' pedagogical sense-making and classroom enactment of inclusive and learner-centered approaches (Coffie, 2025; Mohammed & Hlalele, 2025).

From a learner-centered and inclusive education perspective, teachers' beliefs, professional preparation, and experiential knowledge are central mediating factors that influence how curriculum reforms are interpreted and translated into instructional practice (Florian & Black-Hawkins, 2011). In Ghana, studies suggest that variations in teachers' qualifications and professional development experiences significantly affect instructional strategies and responsiveness to learner diversity, yet these relationships remain under-explored at the local level (Dewodo et al., 2020). This lack of context-specific evidence is particularly consequential given Ghana's recent shift towards a competency-based curriculum that foregrounds inclusivity, differentiation and learner engagement (Akosah & Bonney, 2025).

Addressing this gap is essential because teachers' pedagogical perceptions and classroom practices ultimately determine whether learner-centered and inclusive curriculum reforms result in meaningful learning outcomes. Accordingly, this study examined basic school teachers' understanding of learner-centered pedagogies in the Hohoe Township and explores how teaching experience and academic qualifications influence their inclusive pedagogical practices in real classroom settings.

Literature Review

Learner-centered pedagogies have gained prominence as contemporary classrooms shift toward fostering active engagement, collaboration, critical thinking and learner autonomy. Constructivism, which posits that learning is an active process of meaning-making (Khan & Sharma, 2023; Kharroubi & ElMediouni, 2024), underpins this shift. While evidence shows that constructivist pedagogies deepen conceptual understanding (Nadelson et al., 2018; Krajcik & Shin, 2023), research consistently notes that successful implementation requires teachers to possess both theoretical knowledge and practical skill (Rovnaňová & Nemcová, 2017; Männikkö & Husu, 2019). The mixed performance reported globally, where some teachers apply constructivist methods effectively and others struggle (Batdi, 2023; Rotas & Cahapay, 2020), suggests that teachers' levels of knowledge are not uniform, and these differences may shape how learner-centered strategies are enacted in the classroom.

Collaborative pedagogy similarly relies on teachers' competence in facilitating group interaction and

scaffolding discourse (McTigue et al., 2024; Onrubia et al., 2022). However, studies reveal a persistent gap between theoretical awareness and classroom practice (Mackatiani et al., 2017; Kaymakamoglu, 2018). In contrast, contexts with sustained pedagogical support, such as South Korea, demonstrate more successful collaborative learning outcomes (Jung & Lee, 2020; Choi et al., 2024). These contrasts suggest that structural and experiential conditions significantly shape teachers' capacity to use collaborative approaches.

Inquiry-based learning (IBL) similarly requires teachers to be confident in guiding open-ended exploration and managing uncertainty (Caswell & LaBrie, 2017). However, research again shows uneven readiness: teachers may understand inquiry theoretically but lack confidence to facilitate it (Baildon & Ong, 2022; Manasia et al., 2019). Systems that invest in professional development report greater success in implementing IBL (Wang & Shih, 2022), reinforcing that knowledge alone does not guarantee success; ongoing training matters.

Integrative and reflective pedagogies also highlight the role of teacher capacity. Integrative pedagogy demands interdisciplinary knowledge and collaboration (Drake & Reid, 2020; Herodotou et al., 2019), while reflective teaching requires metacognitive orientation and the skill to cultivate reflection among learners (Cinkara & Derinalp, 2025). Although teachers often value reflective learning, many still lack practical strategies to structure it effectively (Machost & Stains, 2023). Across these approaches, a consistent pattern emerges: teachers' knowledge, qualifications and experience, but do not automatically ensure pedagogical effectiveness.

Methodology

This section outlines the methodological procedures employed to examine how teachers' knowledge, academic qualifications and teaching experience influence their use of learner-centered pedagogies in basic schools in Hohoe, Ghana.

Design

This study used the descriptive survey research design. Descriptive survey research is valuable in creating a clear profile of individuals, events or situations (Casteel & Bridier, 2021). This approach allowed the researcher to gather data from a wide range of respondents, providing a comprehensive understanding of basic school teachers' tendencies,

perceptions and classroom practices. By employing this design, the study managed to describe variations in teachers' pedagogical knowledge and instructional behaviors and examine how these variations relate to the teachers' educational backgrounds and years of teaching experience.

Population and Sampling

The study was conducted in Hohoe Township, located in the Volta Region of Ghana. Hohoe was purposively selected because it is among the districts where Ghana's Standards-Based Curriculum (SBC) has been rolled out at the basic school level in line with national curriculum reforms aimed at promoting learner-centered instruction (National Council for Curriculum and Assessment, 2019). This reform and related inclusive education policy initiatives were introduced by the Ministry of Education and the Ghana Education Service to ensure equitable access to quality education for all learners, including those with diverse learning needs (Ministry of Education, 2015). Although these policy frameworks provide uniform guidelines for classroom practice, empirical evidence indicates significant variation in how teachers interpret and implement learner-centered pedagogies across Ghanaian basic schools (Sakata et al., 2024). Hohoe therefore presents a relevant and strategic context for examining teachers' understanding and implementation of learner-centered pedagogical approaches, as it reflects both national policy compliance and local contextual variability typical of Ghanaian basic school settings.

The study population consisted of all 364 teachers from 28 public basic schools in the Hohoe township. Methodological and contextual considerations informed the decision to involve the entire population rather than selecting a sample. First, the total population was relatively manageable, making a census approach both feasible and appropriate. Second, census ensured that every teacher directly involved in instructional delivery participated, thereby eliminating sampling error and enhancing the validity and credibility of the findings. Third, the nature of the study required comprehensive and inclusive perspectives, as levels of knowledge and practice could vary across different school environments, experience levels and teacher qualifications. Using the census approach, therefore, allowed the study to capture these variations in full rather than partially. Employing the census technique helped to avoid potential bias that may arise when only a sample is selected, especially in

contexts where teachers' practices and exposure to training differ across schools. This approach ultimately strengthened the robustness of the conclusions drawn and provided a more accurate basis for policy recommendations.

Instrumentation

The study primarily used a closed-ended questionnaire. A closed-ended questionnaire is a research instrument consisting of a series of questions for which a researcher provides a suitable list of responses to gather information or data from research participants (Sanchez, 2024; Sharma, 2022). This type of questionnaire was chosen due to several key reasons. First, closed-ended questions efficiently gather quantitative data, allowing for the systematic analysis of responses across a large group of participants. Since the study assessed the knowledge of basic school teachers on learner-centered pedagogies, closed-ended questions provided a structured way to assess specific aspects of their knowledge, such as familiarity with pedagogical theories and practical applications. Second, closed-ended questionnaires ensure consistency across all responses, as every participant is presented with the same set of questions and predefined response options. This uniformity reduces the potential for researcher bias in interpreting responses, thus enhancing the reliability of the data. Additionally, questionnaire facilitates easier comparison of responses across the participants, which is crucial for identifying patterns or trends in the teachers' knowledge.

Data Collection Procedure

Approval from the Hohoe Education Directorate was obtained prior to data collection. The questionnaire was personally administered, with follow-up visits conducted as necessary to ensure a high response rate. Ethical standards, including informed consent, confidentiality and voluntary participation were rigorously upheld throughout the process.

Data Analysis

Data was analyzed using SPSS (Version 25). Research Question 1 was addressed using frequencies and percentages to determine teachers' knowledge of learner-centered pedagogical approaches. Research Questions 2 and 3 were analyzed using a one-way MANOVA to examine differences in mean scores across five dimensions of learner-centered practice: constructivist, collaborative, inquiry, integrative and reflective approaches. Comparisons were based on teachers' years of teaching experience and academic qualifications, using composite scores for each factor. MANOVA was chosen to reduce the likelihood of Type I error and a Bonferroni-adjusted alpha level of .01 (.05/5) was applied. Assumptions of MANOVA, including normality, outliers, linearity and homogeneity of covariance matrices, were systematically checked.

Results and Discussion

This section presents demographic profile of the respondents, focusing on gender, teaching experience and academic qualifications. Details are summarized in Table 1.

Table 1: Demographic Characteristics of Respondents (N =364)

Variable	Frequency	Percentage (%)
Gender		
Male	163	44.8
Female	201	55.2
Educational Qualification		
Certificate	11	3.0
Diploma	75	20.6
Bachelors' degree	242	66.5
Masters	36	9.9
Years of Teaching Experience		
Less than 5 years	33	9.0
6-10 years	88	24.2
11-15 years	159	43.7
16 years and above	84	23.1

Table 1 shows that 163 out of the sample of 364 teachers were males (44.8%) whereas 201 were females (55.2%), indicating that the responses were dominated by female teachers.

This distribution reflects the broader national trend in Ghana, where female teachers constitute the majority of the basic school teaching workforce, particularly at the kindergarten and primary levels (Agyapong, 2018).

Regarding the educational qualifications, the majority, (66.5%), held bachelor's degree as their highest level of education. Following this, 75 (20.6%) had attained a diploma as their highest level of education, 36 (9.9%) held a master's degree as their highest education and 11 (3%) had completed a certificate program as their highest education.

Finally, a bigger portion of the respondents (43.7%) had taught for 11–15 years; in addition, 88 (24.2%) of the respondents had taught for 6–10 years, 84 (23.1%) had taught for 16 years and beyond while 33 (9%) had taught for less than 5 years.

Research Question 1: To what extent do basic school teachers demonstrate knowledge of learner-centered pedagogical approaches in Hohoe?

This research question sought to establish the extent to which basic school teachers demonstrate knowledge of learner-centered pedagogical approaches in Hohoe. Respondents were expected to respond to a series of items concerning their

knowledge on the use of learner-centered pedagogical approaches. The study employed descriptive statistics, in terms of frequencies and percentages in the analysis as reflected in Table 2 through Table 6.

Constructivist Approach

Findings in Table 2 indicate that most teachers demonstrated a sound understanding of constructivist principles. A substantial majority (93.7%) recognized that constructivist pedagogy goes beyond memorization to facilitate the application of knowledge in real-life contexts. Likewise, the majority (87.4%) agreed that the approach encourages learners to generate multiple interpretations and solutions during instruction. These findings suggest that teachers are not only aware of constructivist ideals but are also likely to conceptualize learning as an active and meaning-making process rather than passive reception of information.

Table 2: Constructivism Approach

Constructivism Approach	Agree		Disagree	
	f	%	f	%
Constructivist approach does not emphasize memorization and reproduction of knowledge, but deals with application in situations.	341	93.7	23	6.3
In constructivist approach, teachers encourage learners to come out with multiple answers and interpretations.	318	87.4	46	12.6

This trend seems to aligns with Batdi (2023), who reported that exposure to curriculum reforms and continuous professional development initiatives strengthens teachers' conceptual grasp of learner-centered instructional practices. The findings further resonate with Vygotskian perspectives, asserting that learning deepens when learners actively construct knowledge through dialogue, exploration and reflection. However, the assumption contrasts with the observations of Darling-Hammond (2018) and Zeichner (2017) that although teachers often acknowledge the value of constructivist pedagogies, many still struggle to translate these understandings into classroom practice due to inadequate training, limited resources and high curriculum demands.

The divergence may be attributed to contextual factors, such as recent pedagogical training programs, competency-based curriculum reforms and school-level professional learning communities in the Ghanaian context, which may have contributed to improved teacher awareness during the present study time. Nonetheless, while knowledge of constructivist principles appears

relatively high, knowledge alone does not guarantee effective implementation. Therefore, these findings underscore the need to strengthen ongoing professional development efforts by focusing not only on conceptual understanding but also on practical modelling, co-teaching, mentoring and classroom support systems. Without such sustained support, the gap between teacher knowledge and instructional enactment may persist.

Collaborative Approach

Regarding the collaborative approach, the findings in Table 3 (p. 6), indicate that a vast majority of the respondents (94.8%) not only recognized but ensured that collaborative pedagogy involves grouping learners to work together toward a common learning task. Similarly, 332 respondents (91.2%) acknowledged that collaboration emphasizes interdependence and shared meaning-making through the exchange of ideas. These findings suggest that teachers in the study context possessed a sound conceptual and practical awareness of the objectives and value of collaborative learning. Such understanding is

important as collaborative pedagogy aligns with social constructivist principles, which consider

learning as a socially mediated process (Vygotsky, 1978; Gillies, 2016).

Table 3: Collaborative Approach

Collaborative Approach	Agree		Disagree	
	f	%	f	%
Teacher puts learners in small groups to work on a given task to improve each other's learning.	345	94.8	19	5.2
Collaborative approach places emphasis on interconnectedness in order to support learning through the exchange of ideas.	332	91.2	32	8.8

Table 4: Inquiry-Based Pedagogy

Inquiry-Based Pedagogy	Agree		Disagree	
	f	%	f	%
The inquiry approach enables learners to investigate activities and solve problems on their own.	344	94.5	20	5.5
The inquiry approach places the learner at the Centre of learning experiences in the classroom.	322	88.5	42	11.5

The current findings remain as a challenge based on caution of Mackatiani et al. (2017) that although teachers widely appreciate the benefits of collaborative learning, many lack effective strategies to structure group work, manage group dynamics and design tasks that foster meaningful participation. Kaymakamoglu (2018) similarly observed that while teachers understand the theoretical underpinnings of collaboration, limitations in pedagogical skill and confidence often prevent them from adopting such practices in their everyday teaching. These convergent findings point to a recurring theory–practice divide, where teachers' knowledge of learner-centered approaches is not consistently reflected in classroom practice.

Studies by Jung and Lee (2020) and Choi et al. (2024) show that in settings where teachers receive sustained professional development and institutional support, they are not only able to articulate the principles of collaborative learning but they also implement the principles effectively. The discrepancy between these contexts and the present study suggests that the capacity to apply collaborative pedagogy may depend heavily on systemic factors, such as access to professional learning, school culture supportive of instructional innovation, manageable class sizes and availability of instructional resources.

The findings therefore underscore the need for ongoing, classroom-embedded professional development that moves beyond theoretical workshops to practical modelling, peer coaching and reflective practice. School leaders and policymakers should therefore create supportive environments

that enable teachers to experiment with collaborative strategies, observe model lessons and receive structured feedback. Without such enabling conditions, teachers' conceptual understanding of collaborative learning is unlikely to transform into meaningful pedagogical change.

Inquiry-Based Pedagogy

The results in Table 4 indicate that a substantial majority of the respondents (94.5%) recognized that inquiry-based pedagogy supports students in investigating learning tasks and solving problems autonomously. Similarly, 322 respondents (88.5%) affirmed that the inquiry-based approach places the learner at the Centre of the instructional process. These findings suggest that teachers in this context possess a relatively strong conceptual understanding of the philosophy underpinning inquiry-based learning. This aligns with Baildon and Ong (2022) and Manasia et al (2019), who found that teachers often demonstrate cognitive awareness of inquiry-based pedagogy and acknowledge its role in fostering critical thinking and learner autonomy.

Consistent with McLure and Aldridge (2022) and Woodcock and Woolfson (2019), it is important to note that the existence of conceptual awareness does not automatically translate into effective classroom implementation. Teachers may understand the principles of inquiry-based learning yet struggle to apply them due to contextual constraints, such as large class sizes, limited instructional time, inadequate training or pressure to complete examination-driven curricula. The reported successful classroom enactment of inquiry-based pedagogy by Wang and Shih (2022) and Lee

et al. (2017) may be attributed to differences in school support systems, teacher professional development models and resource availability. In settings where sustained professional learning communities, mentoring and instructional coaching are in place, teachers are more likely to operationalize inquiry strategies effectively.

These findings imply that strengthening teacher professional development should go beyond theoretical workshops to include ongoing, practice-based coaching and classroom support. School leaders and policymakers need to prioritize collaborative lesson design, reflective pedagogical dialogue and access to instructional materials that scaffold inquiry. Without such systemic supports, teachers' conceptual understanding may remain largely rhetorical rather than transformative in daily practice.

Integrative Approach

The results in Table 5 indicate that a substantial majority of the respondents (96.4%) understood that the integrative pedagogical approach enables learners to draw knowledge from different subject domains in a holistic manner. Likewise, 327 teachers (89.8%) affirmed that this approach broadens learners' understanding of their immediate environment and the wider world. These findings suggest that teachers generally possess a conceptual appreciation of integrative learning and its potential to foster connected and authentic learning experiences. This understanding is crucial because integrative pedagogy emphasizes the interdependence of knowledge and encourages learners to view learning as a coherent whole rather than fragmented subject silos (Drake & Reid, 2020).

Table 5: Integrative Approach

Integrative Approach	Agree		Disagree	
	f	%	f	%
Through integrative learning, learners acquire knowledge from different subject areas in a holistic manner.	351	96.4	13	3.6
The integrative approach serves as a mean of broadening learners' knowledge about their immediate environment and beyond.	327	89.8	37	10.2

However, possessing conceptual awareness does not automatically translate into effective classroom practice. The findings lead to a caution based on the view of Herodotou et al. (2019), who observed that although teachers recognized the value of integrative pedagogy, actual implementation was often limited due to curriculum compartmentalization, assessment pressures and inadequate professional training. Similarly, Komba and Mwandangi (2015) found that teachers frequently express positive attitudes toward interdisciplinary teaching but struggle to operationalize it within rigid subject-based timetables and high-stakes examination systems. In the Ghanaian context, this challenge is even more pronounced in basic schools, where curriculum pacing guides and subject-by-subject lesson delivery structures leave little flexibility for cross-disciplinary integration (Aziabah, 2017; Joyce, 2023).

The implication is that while teachers in this study demonstrated adequate knowledge of integrative pedagogy, their capacity to translate this knowledge into consistent classroom practice may be constrained by systemic factors. This suggests a need for sustained professional development that moves beyond theory to include modelling, co-

teaching and reflective lesson planning approaches that demonstrate how subjects can be meaningfully integrated in basic school contexts. Additionally, school leaders and curriculum authorities may need to create more supportive structures, such as flexible timetables, collaborative planning periods and project-based learning frameworks, to enable teachers to implement integrative learning more effectively.

Reflective Approach

The results in Table 6 (p. 8), indicate that the majority of respondents (99.5%) acknowledged that reflective pedagogy enables teachers to examine their classroom practices and improve them critically. Similarly, 354 respondents (97.3%) reported that reflective approaches encourage both teachers and learners to reconsider their teaching and learning processes, providing necessary adjustments where needed. These findings suggest that teachers in the studied context demonstrate a strong conceptual awareness of reflective practice as a tool for continuous professional growth and instructional refinement.

This trend aligns with Cinkara and Derinalp's (2025) assertion, which emphasized reflection as essential

in transforming routine teaching into adaptive, learner-responsive practice. The high level of agreement among respondents also resonates with the findings of Machost and Stains (2023), who observed that teachers generally hold positive dispositions toward reflective pedagogy. However, Machost and Stains (2023) noted that teachers' actual demonstration of reflective competencies

often varies, with some engaging in deep, critical reflection while others remaining at a superficial level. This nuance suggests that while the teachers in the present study appear knowledgeable about the purpose of reflective pedagogy, it does not necessarily guarantee their full and consistent implementation in practice.

Table 6: Reflective Approach

Reflective Approach	Agree		Disagree	
	f	%	f	%
Reflexive approach helps teachers to examine classroom practices and improve upon them.	362	99.5	2	.5
Reflective approach to learning enables teachers and learners to reconsider their teaching and learning activities and provide remedies where necessary.	354	97.3	10	2.7

Table 7: Multivariate Test for Learner-Centred Pedagogical Approaches by Teaching Experience

	Value	F	Df 1	Df 2	Sig.	Partial Eta Squared
Intercept						
Pillai's Trace	.987	5229.370	5.000	356.000	.000	.987
Wilks' Lambda	.013	5229.370	5.000	356.000	.000	.987
Hotelling's Trace	73.446	5229.370	5.000	356.000	.000	.987
Roy's Largest Root	73.446	5229.370 ^b	5.000	356.000	.000	.987
Teaching Experience						
Pillai's Trace	.050	1.205	15.000	1074.000	.261	.017
Wilks' Lambda	.951	1.208	15.000	983.161	.259	.017
Hotelling's Trace	.051	1.210	15.000	1064.000	.257	.017
Roy's Largest Root	.039	2.783 ^c	5.000	358.000	.018	.037

Other scholars have highlighted similar gaps between reflective knowledge and reflective action. For instance, Nocetti-de-la Barra et al. (2024) argued that institutional constraints, such as excessive workload, lack of collaborative spaces and limited mentoring can hinder teachers' ability to engage in meaningful reflective cycles. In the Ghanaian context, reflective teaching is encouraged under the current standards-based curriculum; however, the extent to which teachers receive structured guidance and professional learning communities to support reflection remains variable (Dampson,2021). Therefore, while teachers recognize the importance of reflection, sustained capacity-building interventions may be needed to strengthen the depth, frequency and quality of reflective practice. The findings imply that educational policy implementers and school leaders should not only emphasize reflective pedagogy within teacher training programs but also create supportive environments, such as peer reflection groups, mentoring systems and feedback-driven instructional supervision to ensure that reflective practices move beyond theoretical understanding

and become embedded in everyday classroom practice. This will enhance teachers' ability to adapt instruction to learner needs, thereby improving learning outcomes.

Research Question 2: What are the perceptions of basic school teachers regarding the use of learner-centered pedagogies in basic schools in Hohoe, based on their years of teaching experience?

This research question yielded a null hypothesis that: there is no significant difference in basic school teachers' perceptions of learner-centered pedagogies based on their years of teaching experience. As shown in Table 7, the multivariate test revealed no statistically significant difference in the combined score of teachers' perceptions of learner-centered pedagogical approaches across categories of teaching experience (Wilks' Lambda = .951, F(15, 983.161) = 1.208, p = .259).

Although the partial eta squared value was .017, indicating that years of teaching experience accounted for approximately 1.7% of the variance in the combined perception scores, this effect size is

non-significant. Consequently, years of teaching experience did not have a statistically significant or practically meaningful influence on teachers' perceptions of learner-centered pedagogical approaches in this study.

Based on the result in Table 7, there was a need to examine differences in teachers' perceptions of the use of learner-centered pedagogical approaches on the basis of teaching experience in each of the dimensions of learner-centered pedagogical approaches using the univariate tests. Separate univariate ANOVAs were performed using the Bonferroni's alpha correction of .01 in Table 9 (p. 10).

Using Bonferroni's adjusted alpha of .01, results in Table 8 indicate no statistically significant differences in teachers' perceptions of learner-

centered pedagogical approaches based on teaching experience across all five dimensions: constructivist approach, $F(3, 360) = 1.203, p = .309$, partial $\eta^2 = .010$; collaborative approach, $F(3, 360) = .718, p = .542$, partial $\eta^2 = .006$; inquiry-based approach, $F(3, 360) = 1.276, p = .282$, partial $\eta^2 = .011$; integrative approach, $F(3, 360) = .938, p = .422$, partial $\eta^2 = .008$; and reflective approach, $F(3, 360) = .804, p = .492$, partial $\eta^2 = .007$. Although the partial eta squared values suggest that teaching experience accounted for between 0.6% and 1.1% of the variance across the five pedagogical dimensions, these effect sizes are very small and statistically non-significant. This indicates that years of teaching experience do not meaningfully explain differences in teachers' perceptions of learner-centered pedagogical approaches in this study.

Table 8: Univariate Test for Differences in Learner-Centred Pedagogical Approaches by Teaching Experience

Source	Dependent Variable	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Constructivism Approach	1	35736.507	5590.325	.000	.939
	Collaborative Approach	1	34589.127	8794.509	.000	.961
	Inquiry Approach	1	22510.711	4957.434	.000	.932
	Integrative Approach	1	35790.202	8620.266	.000	.960
	Reflective Approach	1	44100.316	12091.966	.000	.971
Teaching experience	Constructivism Approach	3	7.687	1.203	.309	.010
	Collaborative Approach	3	2.822	.718	.542	.006
	Inquiry Approach	3	5.796	1.276	.282	.011
	Integrative Approach	3	3.896	.938	.422	.008
	Reflective Approach	3	2.933	.804	.492	.007
Error	Constructivism Approach	360	6.393			
	Collaborative Approach	360	3.933			
	Inquiry Approach	360	4.541			
	Integrative Approach	360	4.152			
	Reflective Approach	360	3.647			
Total	Constructivism Approach	364				
	Collaborative Approach	364				
	Inquiry Approach	364				
	Integrative Approach	364				
	Reflective Approach	364				

These findings indicate that basic school teachers in the Hohoe Township exhibit broadly similar perceptions of learner-centered pedagogical approaches regardless of their years of teaching experience. The consistently small effect sizes

further suggest that teaching experience explains only a negligible proportion of variance in teachers' perceptions across the five pedagogical dimensions. This pattern corroborates the earlier multivariate results and confirms that years of teaching

experience do not meaningfully differentiate teachers' perceptions of learner-centered pedagogy within the study context.

However, the findings in Hohoe Township align more closely with a different body of research, which contends that prolonged teaching experience does not necessarily correlate with learner-centered practice. In consonance with the work of Pedwell (2017) and Nickerson (2020), the current study supports the observation that experienced educators can sometimes resist pedagogical change due to entrenched teaching habits. This reinforces Ambon et al.'s (2024) argument that without sustained and targeted professional development, teaching experience alone may not translate into adopting innovative, learner-centered methodologies. The findings contribute to the nuanced understanding that while experience can facilitate pedagogical expertise, it does not unilaterally determine openness or alignment to learner-centered approaches.

Research Question 3: What perceptions do basic school teachers have regarding the use of learner-centered pedagogies for teaching in basic schools in Hohoe on the basis of academic qualification?

This research question yielded the following null hypothesis: There is no significant difference in basic school teachers' perceptions of learner-centered pedagogies based on their academic qualifications.

This research question examined whether basic school teachers' perceptions of learner-centered pedagogical approaches differ according to their academic qualifications. A Multivariate Analysis of Variance (MANOVA) was employed in Table 9, with academic qualification (certificate, diploma, bachelor degree and master degree) serving as the independent variable. The dependent variables consisted of five dimensions of learner-centered pedagogy: constructivist, collaborative, inquiry-based, integrative, and reflective approaches, all measured on an interval scale.

Table 9: Multivariate Test for Learner-Centered Pedagogical Approaches Use by Qualification

Effect	Value	F	Df 1	Df 2	Sig.	Partial Eta Squared
Intercept						
Pillai's Trace	.970	2282.016 ^b	5.000	356.000	.000	.970
Wilks' Lambda	.030	2282.016 ^b	5.000	356.000	.000	.970
Hotelling's Trace	32.051	2282.016 ^b	5.000	356.000	.000	.970
Roy's Largest Root	32.051	2282.016 ^b	5.000	356.000	.000	.970
Academic Qualification						
Pillai's Trace	.034	.824	15.000	1074.000	.651	.011
Wilks' Lambda	.966	.822	15.000	983.161	.653	.011
Hotelling's Trace	.035	.820	15.000	1064.000	.656	.011
Roy's Largest Root	.019	1.364 ^c	5.000	358.000	.237	.019

Before conducting the MANOVA, relevant statistical assumptions were assessed. The distribution of the dependent variables met the normality criteria. Furthermore, the homogeneity of variance-covariance matrices was verified using Box's M test, which was not statistically significant (Box's M = 33.765, $F(45, 4748.757) = .679, p = .950$). This outcome indicates that the assumption was satisfied, justifying the use of Wilks' Lambda for the multivariate test. The multivariate results are presented in Table 10 (p. 11).

As shown in Table 9, the multivariate test revealed no statistically significant difference in teachers' perceptions based on academic qualification: Wilks' Lambda = .966, $F(15, 983.161) = 0.822, p = .653$, partial $\eta^2 = .011$. While academic qualification accounted for approximately 1.1% of the variance in

the combined perception scores, this represents a very small and non-significant effect, indicating that academic qualification does not meaningfully influence teachers' perceptions of learner-centered pedagogical approaches.

Based on the results in Table 9, the univariate analysis of variance (ANOVA) was performed using Bonferroni's alpha of .01 in Table 10.

Using Bonferroni's adjusted alpha level of .01, the results presented in Table 10 indicate no statistically significant differences in teachers' perceptions of learner-centered pedagogical approaches based on academic qualification across all five dimensions: constructivist approach, $F(3, 360) = .438, p = .726$, partial $\eta^2 = .004$; collaborative approach, $F(3, 360) = .391, p = .760$, partial $\eta^2 = .003$; inquiry-based approach, $F(3, 360) = .956, p = .413$, partial $\eta^2 =$

.008; integrative approach, $F(3, 360) = .655$, $p = .580$, partial $\eta^2 = .005$; and reflective approach, $F(3, 360) = 2.221$, $p = .085$, partial $\eta^2 = .018$. Although the partial eta squared values suggest that academic qualification accounted for approximately 0.4%, 0.3%, 0.8%, 0.5%, and 1.8% of the variance in constructivist, collaborative, inquiry-based, integrative and reflective approaches respectively, these effect sizes are very small and did not reach

statistical significance. This indicates that the observed variance attributable to academic qualification is trivial and insufficient to constitute meaningful group differences, particularly under the stringent Bonferroni correction. Consequently, academic qualification does not appear to be a substantive factor influencing teachers' perceptions of learner-centered pedagogical approaches in this context.

Table 10: Univariate Test for Learner-Centred Pedagogical Approaches by Academic Qualification

Source	Dependent Variable	Df	M. Square	F	Sig.	Eta Sq.
Intercept	Constructivism Approach	1	16563.677	2574.749	.000	.877
	Collaborative Approach	1	15044.568	3814.815	.000	.914
	Inquiry Approach	1	9326.440	2048.500	.000	.851
	Integrative Approach	1	15400.495	3700.594	.000	.911
	Reflective Approach	1	19306.245	5355.692	.000	.937
Academic Qualification	Constructivism Approach	3	2.820	.438	.726	.004
	Collaborative Approach	3	1.540	.391	.760	.003
	Inquiry Approach	3	4.354	.956	.413	.008
	Integrative Approach	3	2.725	.655	.580	.005
	Reflective Approach	3	8.005	2.221	.085	.018
Error	Constructivism Approach	360	6.433			
	Collaborative Approach	360	3.944			
	Inquiry Approach	360	4.553			
	Integrative Approach	360	4.162			
	Reflective Approach	360	3.605			
Total	Constructivism Approach	364				
	Collaborative Approach	364				
	Inquiry Approach	364				
	Integrative Approach	364				
	Reflective Approach	364				

The findings show that basic school teachers, regardless of their academic qualifications, shared similar perceptions regarding using Learner-Centered Pedagogical Approaches. This observation is in contrast with the findings of McLure and Aldridge (2022), Woodcock and Woolfson (2019), Kaymakamoglu (2018), and Khan (2018) that higher academic attainment is positively correlated with successful enactment of learner-centered practices. These scholars argue that educators with advanced degrees have a firmer grasp of educational psychology and pedagogical theory, enhancing their capacity to implement LCP strategies effectively. Furthermore, Brinkmann (2019) supports the view that postgraduate qualifications often predispose teachers to favor and apply learner-centered methods more frequently than their less academically credentialed counterparts.

However, the findings agree with Macketiani et al. (2017), who reported that teachers with lower formal qualifications can still demonstrate

considerable pedagogical adaptability, particularly when supported by well-structured professional development initiatives. This nuance supports the observation of Bremner et al. (2022), who concluded that academic credentials alone are insufficient in fostering learner-centered teaching dispositions. Instead, a combination of formal qualifications and sustained professional development yields more impactful outcomes.

The uniformity in perception found among Hohoe Township teachers, regardless of educational background, may be attributed to contextual or systemic factors, such as shared professional development experiences, local education policies or cultural expectations that standardize pedagogical attitudes and approaches across the teaching population. This explanation is consonant with the findings of Du Plessis (2020), who recognizes that targeted pedagogy training can elevate educators' instructional competencies

across varying qualification levels, thereby mitigating the differential impact of academic credentials.

Conclusions and Recommendations

Basic school teachers in Hohoe demonstrate generally strong conceptual knowledge of learner-centred pedagogical approaches; however, this knowledge appears largely theoretical and may not consistently translate into classroom practice due to contextual and systemic constraints. Accordingly, professional development should prioritize sustained, practice-oriented training, supported by continuous instructional leadership, collaborative planning structures and enabling school conditions to strengthen effective classroom enactment of learner-centered pedagogies.

Teachers' perceptions of learner-centered pedagogical approaches do not differ meaningfully by years of teaching experience, indicating broadly shared pedagogical orientations across experience levels. Consequently, professional development initiatives should be implemented as inclusive, school-wide programs rather than experience-differentiated interventions, with policy emphasis on continuous professional learning to sustain consistent learner-centered practices.

Academic qualification does not significantly differentiate teachers' perceptions of learner-centered pedagogical approaches, as comparable views are evident across qualification levels. In response, education authorities should institutionalize regular, practice-focused in-service training and collaborative professional learning platforms that target all teachers, thereby promoting coherence and consistency in learner-centered pedagogy.

References

Agbenyega, J. S. (2007). Examining teachers' concerns and attitudes to inclusive education in Ghana. *International Journal of Whole Schooling*, 3(1), 41–56.

Akosah, E. F., & Bonney, E. A. (2025). Contextualizing Quality in Education: Stakeholder Perspectives from Ghana's Colleges of Education. *Interdisciplinary Journal of Innovation in Nepalese Academia*, 4(2), 1-27.

Ambon, J., Alias, B. S. and Mansor, A. N. (2024). Transforming education: Innovative practices in teacher continuous professional development.

Educational Administration: Theory and Practice, 30(4), 10154–10163.

Awuah, R. S. (2024). Teacher education reform and quality evaluation in Ghana: Opposing forces? (Doctoral dissertation, University of Minnesota).

Aziabah, M. A. (2017). The politics of educational reform in Ghana: Educational policy change and the persistence of academic bias in Ghana's secondary education system.

Baildon, M. C. and Ong, M. W. L. (2022). Singapore teachers' perceptions of research in practice: Contexts, constraints, and possibilities. *Teaching and Teacher Education*, 119, 103850. <https://doi.org/10.1016/j.tate.2022.103850>.

Batdi, V. (2023). Effectiveness of the constructivist approach to learning: A mixed-meta method study. *Education and Science*, 48(213), 85-112.

Bremner, N., Sakata, N., Cameron, L. and Annan, J. (2022). Teacher professional development and learner-centred pedagogy in low- and middle-income countries: A systematic review. *Teaching and Teacher Education*, 110, 103602. <https://doi.org/10.1016/j.tate.2021.103602>.

Brinkmann, S. (2019). Teachers' beliefs and educational reform in India: From 'learner-centred' to 'learning-centred' education. *Comparative Education*, 55(1), 9–29.

Casteel, A. and Bridier, N. L. (2021). Describing populations and samples in doctoral student research. *International Journal of Doctoral Studies*, 16(1).

Caswell, C. J. and LaBrie, D. J. (2017). Inquiry based learning from the learner's point of view: A teacher candidate's success story. *Journal of Humanistic Mathematics*, 7(2), 161–186. <https://doi.org/10.5642/jhummath.201702.11>.

Choi, G. W., Lim, J., Kim, S. H., Moon, J. and Jung, Y. J. (2024). A case study of South Korean elementary school teachers' emergency remote teaching. *Knowledge Management & E-Learning*, 16(2), 259–285. <https://doi.org/10.34105/j.kmel.2024.16.013>

Cinkara, E. and Derinalp, P. (2025). Reflective practice in educational research: A bibliometric analysis of 1991–2023. *Innovations in Education and Teaching International*, 1–18.

Coffie, I. S. (2025). *Transforming science teaching and learning in Ghana through teacher professional*

- learning: A Change Laboratory study* (Doctoral dissertation, University of Technology Sydney (Australia)).
- Dampson, D. G. (2021). Effectiveness of Professional Learning Communities in Ghanaian Basic Schools through the Lenses of Socio-Cultural Theory. *Journal of Educational Issues*, 7(2), 338-354.
- Danijela, M. (2018). The teacher's role and professional development. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE)*, 6(2), 33–45.
- Darling-Hammond, L. (2018). From “separate but equal” to “No Child Left Behind”: The collision of new standards and old inequalities. In *Thinking about schools* (pp. 419–437). Routledge.
- Dewodo, C. Y., Dzakpasu, P. E. and Agbetorwoka, A. (2020). Teachers' perceptions of instructional supervision in basic schools in Ghana. *American Journal of Education and Information Technology*, 4(1), 33–40.
- Drake, S. M. and Reid, J. L. (2020). 21st century competencies in light of the history of integrated curriculum. *Frontiers in Education*, 5, 122. <https://doi.org/10.3389/educ.2020.00122>
- Du Plessis, E. (2020). Student teachers' perceptions, experiences, and challenges regarding learner-centred teaching. *South African Journal of Education*, 40(1).
- Florian, L. and Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *Cambridge Journal of Education*, 41(4), 459–474.
- George, B. M., & Mthethwa, T. M. (2025). Balancing Act: Navigating the Spectrum of Student-Centred and Teacher-Centred Education. *Journal of Inquiry Based Activities*, 15, 95-105.
- Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education*, 41(3), 39–54. <https://doi.org/10.14221/ajte.2016v41n3.3>
- Heinonen, N., Katajavuori, N., Murtonen, M. and Södervik, I. (2023). Short pedagogical training in supporting university teachers' professional vision: A comparison of prospective and current faculty teachers. *Instructional Science*, 51(2), 201-229.
- Herodotou, C., Hlostá, M., Boroowa, A., Rienties, B., Zdrahal, Z. and Mangafa, C. (2019). Empowering online teachers through predictive learning analytics. *British Journal of Educational Technology*, 50(6), 3064–3079.
- Johnston, K. (2024). The experiences of educators in the CCP classroom: a case study (Master's thesis, University of Malta).
- Joyce, Y. (2023). Decolonisation of education: Rethinking higher education curricula and pedagogy in Ghana (Master's thesis, OsloMet-Storbyuniversitet).
- Jung, I. and Lee, J. (2020). A cross-cultural approach to the adoption of open educational resources in higher education. *British Journal of Educational Technology*, 51(1), 263–280. <https://doi.org/10.1111/bjet.12820>.
- Kaymakamoglu, S. E. (2018). Teachers' beliefs, perceived practice and actual classroom practice in relation to traditional (teacher-centred) and constructivist (learner-centred) teaching. *Journal of Education and Learning*, 7(1), 29–37. <https://doi.org/10.5539/jel.v7n1p29>.
- Khan, A. (2018). Teacher qualification and learner-centred pedagogy: Implications for classroom practice. *International Journal of Instruction*, 11(2), 305–320. <https://doi.org/10.12973/iji.2018.11221a>
- Ministry of Education (Ghana). (2015). *Inclusive Education Policy*. Government of Ghana.
- Khan, A. and Sharma, P. (2023). Teacher education and pedagogy of science: Review and reflection. In *Teaching and teacher education in India: Perspectives, concerns and trends* (pp. 235–257).
- Kharroubi, S. and ElMediouni, A. (2024). Conceptual review: Cultivating learner autonomy through self-directed learning & self-regulated learning: A socio-constructivist exploration. *International Journal of Language and Literary Studies*, 6(2), 276–296.
- Komba, S. C. and Mwandangi, G. J. (2015). Reflections on the implementation of competence-based curriculum in Tanzania. *Journal of Education and Learning*, 4(2), 73–80.
- Krajcik, J. and Shin, N. (2023). Student conceptions, conceptual change, and learning progressions. In *Handbook of research on science education* (pp. 121–157). Routledge.
- Kuyini, A. B. and Desai, I. (2007). Principals' and teachers' attitudes toward inclusive education in Ghana. *Journal of Special Education*, 41(1), 20–28.

- Lee, H., Longhurst, M. and Campbell, T. (2017). Teacher learning in technology professional development and its impact on student achievement in science. *International Journal of Science Education*, 39(10), 1282–1303.
- Machost, H. and Stains, M. (2023). Reflective practices in education: A primer for practitioners. *CBE—Life Sciences Education*, 22(2), es2.
- Mackatiani, C. I., Joseph, M. N. and Komo, G. D. (2017). Quality primary education in Kenya: Implications of teachers' characteristics. *European Journal of Education Studies*. <https://doi.org/10.5281/zenodo.400897>.
- Manasia, L., Ianos, M. G. and Chicioreanu, T. D. (2019). Pre-service teacher preparedness for fostering education for sustainable development: An empirical analysis of central dimensions of teaching readiness. *Sustainability*, 12(1), 166. <https://doi.org/10.3390/su12010166>
- Männikkö, I. and Husu, J. (2019). Examining teachers' adaptive expertise through personalpractical theories. *Teaching and Teacher Education*, 77, 126–137.
- McLure, F. I. and Aldridge, J. M. (2022). A systematic literature review of barriers and supports: Initiating educational change at the system level. *School Leadership & Management*, 42(4), 402–431. <https://doi.org/10.1080/13632434.2022.2079806>.
- McTigue, E. M., Jensen, M. T., Gourvennec, A. F. and Solheim, O. J. (2024). The role of school leader support on teacher's engagement during intervention implementation. *International Journal of Leadership in Education*, 1–19. <https://doi.org/10.1080/13603124.2024.2303859>.
- Meschede, N., Fiebranz, A., Möller, K. and Steffensky, M. (2017). Teachers' professional vision, pedagogical content knowledge and beliefs: On its relation and differences between pre- service and in-service teachers. *Teaching and Teacher Education*, 66, 158–170.
- Mohammed, A. S., & Hlalele, D. (2025). Shaping teachers' enactment of inclusion through understanding in Ghana: a sense-making perspective. *Education 3-13*, 53(4), 557-571.
- National Council for Curriculum and Assessment (2019). *Standards-based curriculum for basic schools*. Author.
- National Council for Curriculum and Assessment. (2019). *Standards-based curriculum for basic schools*. Author.
- Nadelson, L. S., Heddy, B. C., Jones, S., Taasobshirazi, G. and Johnson, M. (2018). Conceptual change in science teaching and learning: Introducing the dynamic model of conceptual change. *International Journal of Educational Psychology*, 7(2), 151–195.
- Nocetti-de-la Barra, A., Pérez-Villalobos, C. and Philominraj, A. (2024). Obstacles to a favorable attitude towards reflective practices in preservice teachers in training. *European Journal of Educational Research*, 13(1), 145-157.
- Nickerson, M. E. (2020). Factors affecting resistance and adaptation behavior to innovative digital pedagogy [Doctoral dissertation, Pepperdine University].
- Onrubia, J., Roca, B. and Minguela, M. (2022). Assisting teacher collaborative discourse in professional development: An analysis of a facilitator's discourse strategies. *Teaching and Teacher Education*, 113, 103667. <https://doi.org/10.1016/j.tate.2022.103667>.
- Osman, S. H. A. N. I. (2020). Basic school teachers' conceptions and practices of assessment in the Sissala East Municipality (Doctoral dissertation, University of Education, Winneba).
- Pedwell, C. (2017). Decolonising pedagogy: Re-conceptualising learning in global contexts. *Review of Education, Pedagogy, and Cultural Studies*, 39(1), 28–49. <https://doi.org/10.1080/10714413.2016.1203614>.
- Pedwell, C. (2017). Transforming habit: Revolution, routine and social change. *Cultural Studies*, 31(1), 93–120.
- Rotas, E. and Cahapay, M. (2020). Difficulties in remote learning: Voices of Philippine university students in the wake of COVID-19 crisis. *Asian Journal of Distance Education*, 15(2), 147–158.
- Rovnaňová, L. and Nemcová, L. (2017). Integration of theoretical and practical undergraduate training in the processes of developing student teachers' professional competences. *The New Educational Review*, 47, 176–186.
- Rrustemi, J. and Kurteshi, V. (2023). Pedagogical practice as a foundation course for the development

- of professional skills. *International Journal of Instruction*, 16(2), 1135-1150.
- Sakata, N., Bremner, N. and Cameron, L. (2022). A systematic review of the implementation of learner-centred pedagogy in low-and middle-income countries. *Review of Education*, 10(3), e3365.
- Sakata, N., Yates, C., Edjah, H., & Okrah, A. K. (2024). Exploring postcolonial relationships within policy transfer: The case of learner-centred pedagogy in Ghana. *Comparative Education*, 60(4), 519–536. <https://doi.org/10.1080/03050068.2023.2258681>
- Sanchez, T. W. (2024). Closed-ended question format. In *Encyclopedia of Quality of Life and Well-Being Research* (pp. 1065–1066). Springer International Publishing.
- Sharma, D. N. K. (2022). Instruments used in the collection of data in research. SSRN. <https://doi.org/10.2139/ssrn.4138751>
- Sulley, R. (2018). Analyzing the effects of professional development on the performance of teachers in the Sagnarigu District (Doctoral dissertation).
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (Vol. 86). Harvard university press.
- Wang, R. J. and Shih, Y. H. (2022). Improving the quality of teacher education for sustainable development of Taiwan's education system: A systematic review on the research issues of teacher education after the implementation of 12-year national basic education. *Frontiers in Psychology*, 13, 921839.
- Woodcock, S. and Woolfson, L. M. (2019). Are leaders leading the way with inclusion? Teachers' perceptions of systemic support and barriers towards inclusion. *International Journal of Educational Research*, 93, 232–242.
- Zeichner, K. M. (2017). The struggle for the soul of teaching and teacher education in the US. In *The struggle for the soul of teacher education* (pp. 19–39). Routledge.