Play-Based Learning in Teacher Training: Student-Teachers' Experiences and Readiness in Ghana

By

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Abstract
This study investigates the implementation and impact of play-based learning (PBL) among student-teachers in three Ghanaian teacher education institutions. Using a phenomenological design, the research examined how PBL influences student-teachers' instructional philosophies, their experiences during teaching practice, and their preparedness to integrate PBL in diverse classroom settings. The findings indicate that student-teachers generally view PBL as an engaging, student-centered approach that enhances cognitive development, social interaction, and learner immersion. However, barriers such as inconsistent mentor modeling, limited resources, large class sizes, and negative perceptions from school administrators hinder its effective application. Despite these challenges, most student-teachers expressed confidence in their ability to implement PBL and cited its potential to support inclusive and participatory learning. The study recommends embedding PBL in core teacher education curricula, enhancing mentor training, improving access to locally sourced instructional materials, and sensitizing school stakeholders about the value of play-based learning.

Keywords: Play-Based Learning, Inclusive Education, Student-Teachers, Teacher Education, Ghana

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Introduction

Play-based learning (PBL) has emerged as a transformative pedagogical approach in early childhood and primary education. It is recognized for its capacity to nurture creativity, problem-solving skills, and socio-emotional development in young learners (Pyle & Danniels, 2017; Zosh et al., 2018). Rooted in constructivist theories of learning, PBL aligns with Vygotsky's (1978) assertion that play serves as a critical vehicle for cognitive and social development, particularly when facilitated through guided interactions. While Vygotsky's framework remains influential, contemporary scholars have expanded on his work, emphasizing the role of cultural context, teacher scaffolding, and peer collaboration in play-based environments (Fleer, 2021; Hakkarainen et al., 2013). For instance, Fleer (2019) critiques the universal application of Vygotsky's theories, arguing that play must be understood within localized cultural practices—a perspective particularly relevant in Ghana, where communal play traditions intersect with formal education (Nsamenang, 2008; Amadu et al., 2020). Beyond its developmental benefits, PBL is increasingly regarded as a key strategy for fostering inclusive education, as it allows children of diverse abilities, backgrounds, and learning styles to engage meaningfully in the classroom (UNESCO, 2020; Fleer, 2021).

The concept of inclusive education, as enshrined in the United Nations Sustainable Development Goal 4 (SDG 4), advocates for equitable and quality education for all learners, including those with disabilities, linguistic minorities, and socioeconomically disadvantaged groups (United Nations, 2015). This global commitment is further reinforced by the UNESCO Salamanca Statement (1994) and the Convention on the Rights of Persons with Disabilities (CRPD, 2006), which recognize inclusive education as a fundamental human right. However, despite these robust international frameworks, implementation remains markedly uneven, particularly in low- and middle-income countries (LMICs) where systemic barriers including insufficient teacher training, overcrowded classrooms, inadequate infrastructure, rigid curricula, and persistent socio-cultural stigma create significant obstacles to achieving genuine inclusion (Engelbrecht et al., 2020; Singal et al., 2023).

In Ghana, the government has demonstrated formal commitment to inclusive education through the adoption of the Inclusive Education Policy (2015) and the Disability Act (2006), which aim to eliminate discrimination and ensure access to quality education for all children (Ministry of Education, Ghana, 2015). Additionally, Ghana's alignment with international commitments, such as the Education Strategic Plan (ESP 2018-2030), reflects an ambition to bridge the gap between policy and practice. This gap highlights the importance of teacher training in equipping educators with inclusive pedagogical skills.

This study therefore seeks to explore the experiences and readiness of student-teachers in implementing play-based learning in Ghanaian teacher training institutions. By examining their experiences, challenges, and recommendations, the study aims to contribute to promoting inclusive pedagogy, improving teacher preparation, and aligning national policies with classroom practice.

Statement of the Problem

Play-based learning (PBL) is widely recognized as an effective pedagogical approach that fosters creativity, inclusivity, and active engagement among learners. Globally, research highlights its potential to enhance socio-emotional skills, problem-solving abilities, and overall academic outcomes. However, in Ghana, the preparation of student-teachers continues to be dominated by traditional, teacher-centered instructional methods. This creates a gap between the demands of inclusive, child-centered pedagogies and the actual training provided in teacher education institutions.

Student-teachers, who represent the next generation of educators, are often underexposed to PBL practices and consequently face challenges in applying them in diverse classroom contexts. This lack of preparedness undermines Ghana's commitment to inclusive education and limits the practical translation of education policies into classroom realities. Therefore, exploring student-teachers' experiences, readiness, and challenges with PBL is essential for understanding how best to strengthen teacher training, promote inclusive pedagogy, and align national education goals with effective classroom practices.

Literature Review

PBL is deeply rooted in constructivist learning theories. Vygotsky (1978) emphasized that play provides a unique opportunity for children to practice higher-order thinking and social skills within the "zone of proximal development." Contemporary scholars have expanded this view, emphasizing teacher scaffolding, peer collaboration, and cultural context (Fleer, 2021; Hakkarainen et al., 2013). Fleer (2019), for instance, critiques the universal application of Vygotsky's theories, arguing that play must be interpreted within localized cultural practices. In Ghana, where communal play and storytelling remain integral to childhood socialization, this cultural dimension is particularly significant (Nsamenang, 2008; Amadu et al., 2020).

The inclusive potential of PBL is well established. Research indicates that play allows children with diverse abilities and backgrounds to engage in shared learning experiences, thus, promoting equity and participation (UNESCO, 2020; Fleer, 2021). This aligns with the Salamanca Statement (UNESCO, 1994) and the CRPD (2006), which recognize inclusive education as a fundamental human right. However, barriers remain, especially in LMICs where education systems often prioritize rote memorization and examination results over experiential and inclusive learning (Asare & Nti, 2014).

Another critical dimension of play-based learning (PBL) relates to its role in promoting twenty-first century skills. Scholars argue that PBL encourages creativity, collaboration, critical thinking, and communication, competencies increasingly viewed as essential for global citizenship and employability (Trilling & Fadel, 2009; Fullan & Scott, 2014). In contexts like Ghana, where education reforms emphasize skills for socio-economic development, the integration of PBL in teacher preparation has the potential to align classroom practices with broader developmental goals. However, such integration requires sustained institutional commitment and innovative curriculum design, which are often constrained by exam-oriented systems (Adu-Gyamfi, 2021).

Moreover, research from sub-Saharan Africa underscores the challenges of embedding PBL in resource-constrained environments. For instance, Otieno and Collett (2022) found that Kenyan early childhood teachers valued play pedagogies but often struggled with inadequate materials and overcrowded classrooms. Similarly, Essuman and Akyeampong (2020) highlight how Ghanaian classrooms remain dominated by rote learning, leaving little space for experiential approaches such as PBL. These findings suggest that

while the philosophy of PBL resonates with teachers, systemic constraints limit its full realization in practice.

Another underexplored area in the literature is how teacher identity and beliefs shape the adoption of PBL. Studies show that teachers' self-efficacy and professional identity strongly influence whether they perceive PBL as compatible with their instructional goals (Han, 2021; Lillard et al., 2017). In Ghana, where hierarchical teacher–student relations are still culturally prominent, shifting teacher identity toward a facilitative, learner-centered role presents both cultural and pedagogical challenges (Akyeampong et al., 2013). Understanding these identity dynamics is critical for designing teacher education programs that move beyond technical training and engage deeply with teachers' beliefs and values.

The literature also points to promising strategies for contextualizing PBL in African settings. Nsamenang and Tchombe (2011) argue that indigenous practices such as communal play, storytelling, and role imitation can serve as culturally relevant anchors for PBL. This aligns with research by Amponsah and Oti-Agyen (2019), who demonstrated that Ghanaian student-teachers who incorporated local games into mathematics instruction enhanced learner engagement and comprehension. Such findings reinforce the need to localize PBL rather than transplanting models from Western contexts uncritically. By building on cultural resources, teacher education institutions can better prepare pre-service teachers to apply PBL in ways that resonate with both learners and communities.

Teacher training is a critical determinant of inclusive education success. Studies show that teacher attitudes, self-efficacy, and pedagogical skills significantly influence the extent to which inclusive practices are implemented (Sharma & Sokal, 2016; De Boer et al., 2019). Yet, pre-service teacher programs in Ghana still rely heavily on traditional, teacher-centered approaches (Akyeampong et al., 2013; Opoku-Asare & Siaw, 2015). This lack of emphasis on inclusive pedagogies leaves many teachers underprepared to address the needs of diverse learners, particularly those with disabilities (Opoku et al., 2022).

Despite Ghana's formal policy commitments and cultural traditions of communal play, there is limited research on how student teachers experience and engage with PBL. This gap is concerning, given PBL's potential to bridge the gap between inclusive education policy and practice (Amadu et al., 2020). Exploring student teachers' perspectives offers valuable insights into how teacher preparation can be restructured to support inclusive education in Ghana and similar contexts.

Materials and Methods
Study Design

This study employed a phenomenological research design to deeply explore the lived experiences of student-teachers regarding the integration of play-based learning (PBL) in Ghanaian teacher education programs. Phenomenology was particularly suited for this investigation as it focuses on understanding the essence of participants' experiences and the meanings they attribute to them. The design allowed for an in-depth examination of how student-teachers perceive their preparedness to implement PBL, the challenges they encounter, and their readiness to apply these methods in real classroom settings. By adopting this approach, the study captured rich, contextual insights into the phenomenon of PBL integration from the perspective of those directly involved in teacher training programs.

Sample Size Determination and Sampling Technique

The study utilized thematic saturation to determine the appropriate sample size, continuing interviews until no new substantive information or themes emerged from the data. This approach ensured comprehensive coverage of the research topic while maintaining methodological rigor. Saturation was achieved after conducting interviews with 17 third-year student-teachers from various subject areas. Thus, providing diverse yet focused perspectives on PBL integration.

A homogeneous purposive sampling technique was employed to select participants who shared key characteristics relevant to the study. All participants were third-year student-teachers who had recently completed both on-campus and off-campus teaching practice sessions. This sampling strategy ensured that participants had comparable experiences with PBL during their training. Thus, allowing for deeper exploration of shared themes and patterns in their responses.

Research Instrument

The primary data collection tool was a semi-structured interview guide designed to elicit detailed responses about participants' experiences with PBL. The guide began with demographic questions about the participants' college or university, department, age, gender, and subject area. It then progressed to core questions exploring how their training prepared them to integrate PBL, their readiness to deliver PBL-based lessons, and their actual experiences implementing PBL during teaching practice.

Key probes were included to encourage participants to elaborate on specific aspects of their experiences. These included questions about how mentors modeled PBL during teaching practice, how they prepared the learning environment for PBL activities, the types of play-based activities they engaged in with learners, and the factors that either facilitated or hindered their use of PBL. Additional probes examined participants' teaching philosophies regarding PBL, the benefits they observed for both teachers and learners, and their overall readiness to implement PBL in future teaching positions. The interview guide concluded with an open-ended invitation for any additional comments, allowing participants to share insights that might not have been captured by the structured questions.

Trustworthiness Criteria

To ensure the study's trustworthiness, four key criteria were rigorously applied throughout the research process. Credibility was established through member checking, where participants reviewed their interview transcripts for accuracy, and through triangulation of data across different subject areas. Dependability was achieved by maintaining a detailed audit trail that documented all methodological decisions and research procedures. Confirmability was addressed through reflexive journaling, where the researcher recorded and bracketed personal biases and preconceptions about the topic. Finally, transferability was enhanced by providing thick descriptions of the research context, participant characteristics, and methodological processes, enabling readers to assess the potential applicability of findings to other settings.

Field Data Collection

Data collection took place over a 2-month period in quiet, private settings at the participants' respective colleges and university. This was to ensure comfort and minimize distractions. Each interview lasted between thirty to forty-five minutes and was audio-recorded with the participant's consent. Prior to the main data collection, the interview guide

was tested with two third-year student-teachers to assess question clarity and flow, resulting in minor refinements to the wording of some probes. These student-teachers did not participate in the main study.

The interviews followed a conversational style while adhering to the interview guide structure. This allowed participants to share their experiences freely while ensuring coverage of all key issues raised. Field notes were taken during and immediately after each interview to capture nonverbal cues and contextual observations that might inform later analysis.

Data Management and Analysis

All audio recordings were transcribed verbatim and anonymized to protect participant confidentiality. The transcribed data underwent rigorous thematic analysis following established qualitative research protocols. The analysis process began with repeated readings of the transcripts to achieve immersion and familiarity with the data. Initial codes were then generated to identify significant features of the data relevant to the research questions. These codes were systematically organized into potential themes, which were reviewed and refined to ensure they accurately represented the dataset. The final stage involved defining and naming the themes, resulting in a rich thematic framework that captured the essence of participants' experiences with PBL. Throughout the analysis process, the research team engaged in regular discussions to compare interpretations and reach consensus on emerging themes.

Ethical Considerations

The study adhered to stringent ethical standards throughout all research phases. Formal approval was obtained from the institutional review board of the University of Education, Winneba, prior to data collection. Participants provided written informed consent after receiving comprehensive information about the study's purpose, procedures, potential risks and benefits, and their rights as research participants.

All collected data were treated with strict confidentiality. Personal identifiers were removed from transcripts and replaced with pseudonyms, and all electronic data were stored on password-protected servers accessible only to the research team. Participants were informed of their right to withdraw from the study at any time without penalty.

Results
Demographic Characteristics of Participants

Seventeen third-year teacher-students (10 males; 7 females) completed the qualitative phase of this study. The demographic characteristics of these student-teachers are presented in Table 1. The mean age of student-teachers was 27.6 years (standard deviation of 2.7 years).

Table 1: Demographic Characteristics of Student-Teachers in the Study

Demographic	Male f (%)	Female f (%)	Total n (%)
Age (years)			
19-23	2 (20)	-	2 (11.8)
24-28	5 (50)	3 (42.9)	8 (47.1)
29-33	3 (30)	3 (42.9)	6 (35.3)
34-38	-	1 (14.3)	1 (5.9)
39-43	-	-	-
Non-response			
Department			
Educational Studies	5 (50)	3 (42.9)	8 (47.1)
Early Childhood Education	4 (40)	4 (57.1)	8 (47.1)
Mathematics and Information and Communications Technology	1 (10)	-	1 (5.9)
Subject Area			
Education	5 (50)	3 (42.9)	8 (47.1)
Mathematics	1 (10)	-	1 (5. 9)
Early Childhood	4 (40)	4 (57.1)	8 (47.1)

Note. f = frequency, n = number of units
Source: Field Data 2025

The modal age range for student teachers was 24-28 years. The vast majority of student-teachers (94.1 %) who completed the qualitative phase of this project were from either Early Childhood Education Department or Educational Studies Department. Education, mathematics and early childhood were the specific subjects of student-teachers involved in the quantitative phase.

Influence of play-based learning on teaching philosophy of student-teachers

The specific themes and supporting quotes on the influence of play-based learning on the teaching philosophies of student-teachers are presented in Table 2.

Table 2: Influence of Play-Based Learning on the Teaching Philosophies of Student-Teachers

Engaging and Fun	a. "I have the belief that learners would be involved in some kind of fun which will help them to be fully involved in my lesson." (Respondent 6) b. "Teachers play like singing songs to the learners in order to bring their minds back to the classroom especially when the class gets boring." (Respondent 10)
Individualized Learning	c. "Learners were able to learn at their own pace." d. (Respondent 12) e. "Play-based learning allows learners to learn easily and at their own rate." (Respondent 12)
Student-Centered	f. "My philosophy is student-centered using different kinds of materials and instructions so that teaching and learning can go on well." (Respondent 13)
Free Environment	g. "My teaching philosophy is about allowing learners to learn in their own free environment and this is consistent with play-based learning. (Respondent 14)

Source: Field Data 2025

The theme of "engaging and fun" is reflective of some student-teachers thinking that play-based leaning has positively influenced teaching philosophies by making them more engaging and enjoyable. "Individualized learning environment" is consistent with the idea that play-based learning has provided the opportunity for some student-teachers to tailor their instructions to the specific learning needs of learners. The theme of "student-centered" is indicative of the fact that some student-teachers believed play-based learning has offered them the opportunity to prioritize student interests. Finally, the theme of a "free environment," reflects the open, unrestricted, and comfortable atmosphere for learners to learn due to the incorporation of play-based learning in their teaching philosophy.

How mentors (teachers) use of PBL in lesson delivery during STS

Student-teachers recounted how tutors/lecturers prepare the environment for play-based learning activities. These findings are presented in Table 3.

Table 3: Preparation of the Learning Environment for Play-Based Learning as Recounted by Student Teachers

Themes	Supporting Quotes
Arrangement of Learning Space	a. "They always try to arrange the place and they make the learners sit in groups. The teachers try and create a space for easy movement." (Respondent 9)
Use of Teaching and Learning Materials	b. "The teachers also bring teaching and learning materials to make sure learners learn. Mathematics for instance, teachers bring bundles of sticks and other materials like cards depending on the choice of play activity." (Respondent 9)
No preparation of the learning environment	c. "I have not witnessed any preparation of the learning environment towards play-based learning as my mentor never did that." (Respondent 5) d. There's no preparation of the learning environment" (Respondent 8) e. I never saw any preparation of the environment for play-based during STS. (Respondent 2)

Source: Field Data 2025

The theme of "arrangement of learning space" indicates that some tutors/lecturers modify the physical environment so as to make it conducive for play-based learning. As an example, group seating as recounted in the supporting quote, is designed to maximize interactions between learners which is consistent with play-based learning. "Use of teaching and learning materials" as a theme relates to the practice of tutors/lecturers provide the materials and resources that are required for a specific paly-based learning experience. The theme of "no preparation of the learning environment" suggests some tutors/lecturers may be dependent on other instructional strategies other than play-based learning and do not prepare the environment as such.

The themes and quotes related to the choice of play-based activities by tutors/lecturers as observed by student-teachers are presented in Table 4.

Table 4: Choice of Play-Based Activities by Tutors/Lecturers, as Observed by Student-Teachers

Themes	Supporting Quotes
Active Use of Play-Based Methods	a. "Mathematics for instance, teachers bring bundles of sticks and other materials like cards depending on the choice of play activity. I have seen them using songs as their play based whenever they are teaching mathematics." (Respondent 9) b. "At that stage, they are young...They perform their activity one by one. The activity was that they are given some cards and a drawing on it...you must also pick four items." (Respondent 15)
Limited Use of Play-Based Methods	c. "My mentor does not mostly use play-based methods, but she used some few that I realized. Sometimes she will use brainstorming and discussion method. The other time too I observed her using role play in her teaching." (Respondent 10)
Absence of Play-Based Learning	d. "In my experience, my mentor did not use play-based learning." (Respondent 2) e. "I have not observed any mentor using play-based learning to teach." Respondent 5) f. "I have not observed my mentor using play-based learning." (Respondent 8)

Source: Field Data 2025

"Active use of play-based learning" as a theme indicates student-teachers have observed tutors/lecturers deliberately incorporating concepts of play-based learning in their lesson delivery. It involves tutors and lecturers using specific instructional materials that are suitable for the application of play-based learning. "Limited use of play-based methods", is consistent with the fact that play-based learning is not central to the instructional delivery of some tutors/lecturers as observed by student-teachers. The theme of "absence of play-based learning" suggests some tutor/lecturers never use play-based learning as an instructional strategy.

The themes and quotes related student-teachers' responses to their application of play-based learning during on-campus teaching are presented in Table 5.

Table 5: Student-teachers Application of Play-Based learning during On-campus Teaching Practice

Themes	Supporting Quotes
Group Activities and Demonstrations	a. Respondent 15: "Grouping my students into groups and then tell them what I am teaching on...start demonstrating to the students what I want them to do...implement singing...move out of the class and then either sing and put them into groups and engage them in any acting activity." (Respondent 15)
Hands-On Demonstrations	b. "Used so many demonstrations...brought football and then some of them will kick and push it as a means of understanding forces." (Respondent 10)
	c. "Treated mathematics...topic was representing counting numbers using bundles such broomsticks or matches." (Respondent 8)
Role Play	d. "Used role play...asked some of the learners to play the role of their fathers and some to play the role of being a mother, and others play the role of being the kids in the family." (Respondent 11)
Incorporating Songs	e. "Ask my learners to sing songs which have a link to the topic they're learning." (Respondent 13)
	f. "Create my own songs with the words in class...mention what is found in the classroom." (Respondent 12)

Source: Field Data 2025

The theme "group activities and demonstrations" pertains to the use of interactive and participatory teaching methods in the context of play-based learning. In this theme, student-teachers employ various strategies that involve students working together in groups and participating in hands-on demonstrations to enhance the learning process. "Hands-On Demonstrations" involve using physical objects and actions to demonstrate and teach abstract concepts, fostering active participation and enhancing comprehension. Respondent 10's use of a football to illustrate forces exemplifies this theme by making the learning experience more engaging and experiential for the learners. The theme of "role play" in the context of student-teachers' application of play-based learning involves the use of simulated teaching scenarios to develop teaching skills, apply pedagogical knowledge, and gain practical experience. "Incorporating songs" as a theme denotes the practice of using music and songs as an integral part of the teaching and learning process. In this context, student-teachers leverage songs as a pedagogical tool to enhance various aspects of learning.

The themes and quotes related to student-teachers' responses to their application of play-based learning during off-campus teaching are presented in Table 6.

Table 6: Student-Teachers Application of Play-Based Learning during Off-Campus Teaching Practice

Themes	Supporting Quotes
Use of Play-Based Materials and Games	a. "I gather materials like pebbles and crown corks and engage students in several games while they learn about numbers." (Respondent 5) b. "I wrote words on card boards and design the card board and give it to the learners. They pick the cards at random and respond to the topic under science." (Respondent 9)
Role Assignments and Creative Activities	c. "I implement play-based learning by grouping my students and assigning a role to each group to either act or sing." (Respondent 7)
Challenges and Non-Compliance	d. "The children during off-campus teaching will not comply with what you tell them and will always be complaining about their friends." (Respondent 12)
Flexibility and Outdoor Activities	e. "Off-campus teaching is more flexible, and I am able to take the children out for outdoor games where they run in circles and identify living things." (Respondent 11)

Source: Field Data 2025

These themes illustrate the diverse approaches student-teachers take when implementing play-based learning during off-campus teaching. They incorporate materials, creative activities, and hands-on learning experiences to engage students. However, they also face challenges related to student compliance and behavior, while appreciating the flexibility of off-campus teaching for outdoor activities. The theme "use of play-based materials and games" highlights the integration of hands-on materials and interactive games into the teaching and learning process. In this teaching approach, student-teachers utilize hands-on materials and interactive games to facilitate learning and engage students. The theme of "role assignments and creative activities" reflects student-teachers making learners take on specific roles within scenarios, leading to immersive, engaging, and empathetic learning experiences. The theme of "challenges and non-compliance" in the context of play-based learning as applied by student-teachers pertains to the difficulties or obstacles that they encounter when implementing play-based learning activities. This theme encompasses various issues related to learner behavior, engagement, and classroom dynamics. "Flexibility and outdoor activities" as a theme suggests that off-campus teaching provides student-teachers with the flexibility to incorporate outdoor activities into their lessons, which can enhance the learning experience by making it more dynamic, engaging, and experiential. It also emphasizes the potential for students to connect with the natural world and gain practical knowledge.

The themes and related quotes on the benefits of play-based learning to teachers and learners, as espoused by student teachers are presented in Table 7.

Table 7: Benefits of Play-Based Learning to Teachers and Learners as Espoused by Student-Teachers

Themes	Supporting Quotes (Teacher Benefits)	Supporting Quotes (Learner Benefits)
Engagement	a. "Helps you to influence and engage learners in the process of teaching and learning." (Respondent 14)	a. "Helps students to pay attention in class." (Respondent 14)
Reduced Stress	b. "You the teacher will not be stressed when you are teaching." (Respondent 12)	b. "Learning comes naturally when a teacher uses play-based learning." (Respondent 12)
Conceptual Clarity	c. "Helps you to express what you want to teach." (Respondent 5)	c. "They get an understanding of what you are trying to teach them." (Respondent 5)
Content Mastery	d. "Helps teachers to master content." (Respondent 4)	d. "Helps learners to master content without much effort." (Respondent 4)
Immersion	e. "When you're using play-based learning, you are into the lesson." (Respondent 2	e. "Learners achieve deeper engagement and immersion." (Respondent 2)

Source: Field Data 2025

The theme of "engagement" as described by student-teachers in the context of play-based learning highlights the positive impact that play-based learning has on both teachers and learners in terms of active participation and focus during the teaching and learning process. Thus, play-based learning creates an environment where both teachers and learners are actively participating and enjoying the educational journey. The theme of "reduced stress" in the context of play-based learning, as described by Respondent 12, emphasizes how this teaching approach can have positive effects on both teachers and students by minimizing stress and making the learning process more enjoyable. The theme of "conceptual clarity" in the context of play-based learning, as described by Respondent 5, highlights how this teaching approach can contribute to clearer communication of concepts between teachers and students, ultimately leading to better understanding. The theme of "content mastery" underscores how play-based learning benefits both teachers and learners by promoting a deeper understanding and mastery of educational content. Teachers are motivated to master the material in order to create effective play-based activities, and learners experience a more enjoyable and effortless path to content mastery, making the learning process more effective and enjoyable overall. The theme of "Immersion" highlights how play-based learning fosters a high level of engagement and involvement for both teachers and learners. Teachers are immersed in the teaching process, creating and facilitating dynamic activities, while learners achieve a deeper sense of engagement and immersion in the learning experience, leading to more effective and enjoyable education.

Barriers encountered by student-teachers in their effort to implemented play-based learning are presented in Table 8.

Table 8: Barriers recounted in implementing play-based learning experienced by student teachers

Themes	Supporting Quotes
Fear of Participation and Recognition	a. "Some were scared to come forward and then demonstrate to their colleagues... I encouraged them to come up and then do it." (Respondent 2)
Large Class Sizes and Limited Access to Materials	b. "My limitation was the size; in the primary schools, the class sizes were too huge... children were not getting access to the materials." (Respondent 9)
Misuse of Materials	c. "The challenges of play-based learning that I observed is that some of the learners misuse some of the materials." (Respondent 10)
Competency and Language Barrier	d. "The challenge I face is that since I am a newly trained teacher... there is a language barrier... classes sometimes lack something such as chairs and other furniture." (Respondent 8)
Resource and Environmental Challenges	e. "Head mistress and head masters... think you are playing with their resources... when I went to teach at off campus, there was no classroom so I had to use the environment." (Respondent 3)

Source: Field Data 2025

"Fear of participation and recognition" in the context of play-based learning refers to the apprehension or reluctance some students may have when it comes to actively participating in learning activities that require them to demonstrate their understanding or skills in front of their peers. This theme underscores the challenges related to learners' comfort levels with engaging in interactive and experiential learning methods such as play-based learning. The theme of "large class sizes and limited access to materials" in the context of play-based learning points to the challenges faced by teachers when there is an excessive number of students in a classroom and when resources and materials are insufficient to support effective play-based learning experiences. The theme of "misuse of materials" in the context of play-based learning refers to the challenge of learners not using educational materials, props, or resources appropriately or as intended during learning activities. The theme of "competency and language barrier" in the context of play-based learning refers to the challenge faced by student-teachers, when they lack the necessary skills, knowledge, or fluency in the language of instruction to effectively implement play-based teaching methods. "Resource and Environmental Challenges" in the context of play-based learning pertains to the difficulties that student-teachers encounter when they lack access to necessary educational resources, materials, and appropriate learning environments for conducting play-based activities.

The level of readiness of student-teachers to implement PBL are presented in Table 9.

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Table 9: Level of readiness of student-teachers to implement play-based learning

Themes	Supporting Quotes
High Readiness (70-100%)	a. "I am 70% ready to implement play-based learning." (Respondent 1) b. "I am 60-70 percent ready to implement play-based learning... it makes the learning process easier for us." (Respondent 5)
Moderate Readiness (50%)	c. "I am 50% ready to implement play-based learning after school because I am still learning." (Respondent 8)
Consistently Ready	d. "I'm always ready because I'm being prepared for it." (Respondent 10)

Source: Field Data 2025

The theme of "high readiness" in the context of the student-teachers' responses refers to the expressed confidence and preparedness of certain individuals to implement play-based learning in their teaching practices. This theme indicates that these student-teachers feel well-prepared and enthusiastic about incorporating play-based methods into their future classrooms. On the other hand, the theme of moderate readiness" in the context of the student-teachers' responses signifies that these individuals feel partially prepared to implement play-based learning in their teaching practices. This theme suggests that while they have some level of readiness, they also acknowledge that there may be room for further development and improvement. "Consistently ready" as a theme in the context of the student-teachers' responses signifies a continuous state of preparedness and readiness to implement play-based learning in their teaching practices. This theme suggests that these individuals are consistently well-prepared and motivated to utilize play-based methods in their classrooms.

After the interview sessions, all tutors/lecturers and student-teachers were subject to structured observations during which they taught a topic of their choice within their subject area. Each observation session lasted a minimum of 40 minutes, and the instructors' performance was evaluated and scored based on the "reflect, connect, and apply" principle, which underpins play-based learning. The scores for the tutors/lecturers are summarized in Table 21.

Discussion

This study set out to explore the implementation and impact of PBL in teacher training programs in Ghana through the lived experiences of student-teachers from a university and two Colleges of Education. The findings provide further empirical evidence to the growing body of literature that positions PBL as a transformative and inclusive pedagogical approach (Pyle & Danniels, 2017; Zosh et al., 2018). In line with Vygotsky's (1978) sociocultural theory of learning, several findings in this study confirm that play does not only promote cognitive development but also social development among learners. Relative to Ghana, these findings are particularly significant as recent reforms such as the Inclusive Education Policy (Ministry of Education, Ghana, 2015) and the Education Strategic Plan (ESP 2018–2030) have emphasized inclusive pedagogy, yet classroom-level practices often remain entrenched in rote, teacher-centered approaches (Asare & Nti, 2014; Akyeampong et al., 2013).

The influence of PBL on the teaching philosophy of student-teachers was evident in their alignment with student-centered and inclusive educational values. Participants articulated a belief in learning that is engaging, fun, and individualized. This is consistent with the findings of Fleer (2021) that play is not only culturally situated but also central to equitable learning environments. These findings also resonate with Amadu et al. (2020), who highlight the transformative potential of PBL in the Ghanaian early childhood context. By shifting student-teachers' philosophies towards learner autonomy and enjoyment, PBL contributes to the cultivation of classrooms that are more accommodating of learners with diverse needs, including those with disabilities.

However, the findings also expose inconsistencies in the modeling of PBL by mentors and lecturers during teaching practice. Some mentors actively prepared the learning environment and integrated play materials, while others exhibited limited or no use of PBL strategies. This inconsistency is troubling due to the fact that effective teacher modeling plays a critical role in shaping pre-service teachers' future classroom behaviors (Opoku et al., 2022; De Boer et al., 2019). Again, the lack of consistent modeling may reflect broader systemic issues within Ghana's teacher education system in which policy ambitions often fails to bridge the gap between inclusive pedagogical ideals and actual practice (Gyimah et al., 2021).

The study's observation that student-teachers employed diverse and contextually relevant PBL strategies such as group work, role play, demonstrations, and song integration underscores their adaptability and potential for inclusive practice. Particularly notable were efforts to improvise with local materials such as pebbles and crown corks during off-campus teaching. These practices align with UNESCO's (2020) advocacy for contextualized, low-cost inclusive strategies in low- and middle-income countries. They also support Nsamenang's (2008) argument that African learners benefit from pedagogies that build on communal and experiential traditions.

The benefits of PBL reported by student-teachers enhanced engagement, reduced stress, improved conceptual clarity, and deeper content mastery are congruent with existing literature (Zosh et al., 2018; Fleer, 2021). These benefits extend not only to learners but also to teachers, who feel more connected and immersed in the instructional process. This dual advantage strengthens the case for integrating PBL into mainstream teacher education curricula, particularly as a means of enhancing inclusive education (UNESCO, 2020).

Despite these promising insights, the study revealed a number of challenges impeding the effective implementation of PBL. Large class sizes, limited access to teaching and learning materials, language barriers, and administrative resistance were all cited by participants. These findings mirror those of Adusei et al. (2023) and Engelbrecht et al. (2020), who identified similar barriers across sub-Saharan African education systems. In particular, the perception among some school heads that PBL is a misuse of resources underscores the urgent need for stakeholder sensitization and systemic support. Furthermore, fear of participation among learners and mismanagement of play materials reveal the need for more structured teacher guidance and classroom management strategies, especially when working with learners who have special educational needs.

The expressed readiness of most student-teachers to implement PBL, despite these challenges, is encouraging. Many reported being 60–70% ready to readily implement PBL. This finding is significant as research by Sharma and Sokal (2016) suggests that teacher self-efficacy and preparedness are strong predictors of successful inclusive teaching. Yet, moderate readiness levels among some participants also point to a need for sustained capacity

building, mentorship, and institutional support to ensure PBL is not only taught but internalized and practiced.

Overall, this study validates the importance of embedding PBL within Ghana's teacher education programs as a viable strategy for promoting inclusive, learner-centered education. The findings highlight both the promise and the limitations of current practices, and they reinforce prior calls for systemic alignment between policy, training, and practice (Agbenyega & Deku, 2018; Opoku-Asare & Siaw, 2015). By centering student-teacher voices, this study contributes to a nuanced understanding of how PBL can be harnessed to support equity and inclusion in Ghanaian classrooms.

Conclusion and Recommendations

This study has demonstrated that play-based learning (PBL) significantly influences the pedagogical philosophies and practices of student-teachers in Ghanaian teacher education institutions. The results suggest that when appropriately modeled and supported, PBL fosters cognitive development, social interaction, learner engagement, and inclusive classroom practices. However, inconsistencies in mentor modeling, resource constraints, large class sizes, and administrative resistance continue to hinder its full implementation.

To bridge the gap between PBL policy aspirations and classroom realities, it is essential for teacher education institutions to embed PBL into their formal curricula. This integration should not be limited to isolated workshops or elective modules, but should form part of the foundational training that all pre-service teachers receive. Practical sessions where student-teachers collaboratively plan and implement play-based lessons should be a core component of this training. These sessions would allow them to internalize PBL principles and develop strategies that align with the realities of Ghanaian classrooms.

Mentors and supervising tutors also play a pivotal role in shaping the classroom practices of pre-service teachers. Therefore, targeted professional development programs are needed to prepare mentors to model inclusive and play-based pedagogies effectively. Such programs should focus on deepening mentors' understanding of how PBL supports diverse learners and equipping them with contextually relevant strategies for large or resource-constrained classrooms.

Resource availability is another critical area requiring attention. The Ghana Education Service, in collaboration with district education offices and school leadership, should ensure that teaching and learning materials suited for play-based instruction are available and accessible. Special consideration should be given to promoting the use of low-cost, locally sourced materials that reflect the cultural and linguistic context of learners.

Equally important is stakeholder engagement. School leaders, parents, and community members must be sensitized to the value of play-based learning not as a form of recreational diversion, but as a legitimate, research-backed instructional strategy. National campaigns and school-based workshops could help dispel myths that PBL wastes instructional time or resources, and instead promote its capacity to enhance academic achievement and learner well-being.

Teacher preparation should also include explicit training in classroom management techniques tailored to PBL environments. Student-teachers need skills to facilitate group activities, manage noise constructively, and support learners with varied needs and temperaments. Such preparation is especially important for student-teachers working in inclusive classrooms where learners with disabilities require differentiated support.

Furthermore, national and institutional-level systems for monitoring and evaluating PBL implementation should be established. These mechanisms can include classroom

observations, student-teacher portfolios, and performance assessments aligned with inclusive education benchmarks. Such evaluations will provide data on the fidelity of implementation and highlight best practices and areas in need of improvement.

Finally, future research should examine the long-term impact of PBL training on the professional development of teachers and learning outcomes of diverse student populations. Longitudinal and mixed-method studies are needed to explore how student-teachers' exposure to PBL translates into sustained inclusive practice over time. Future inquiries might also assess how PBL affects learners with disabilities in terms of academic progress, social integration, and emotional development. These research efforts are critical to informing policy, scaling effective models, and ensuring that PBL continues to serve as a bridge toward equitable and inclusive education systems in Ghana and similar contexts.

Declaration of Interest Statement

The author declares that they have no conflicts of interest or competing financial or personal relationships that could have appeared to influence the work reported in this paper.

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