

**UNIVERSITY OF EDUCATION, WINNEBA**

**KINDERGARTEN TEACHERS' ATTITUDE TOWARDS THE  
USE OF PLAY BASED PEDAGOGY IN SAGNERIGU  
MUNICIPALITY OF THE NORTHERN REGION**



**MASTER OF PHILOSOPHY**

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NORTHERN REGION**



**A thesis in the Department of Early Childhood Education,  
Faculty of Applied Behavioural Science in Education,  
submitted to the School of Graduate Studies in partial fulfilment  
of the requirements for the award of the degree of  
Master of Philosophy  
(Early Childhood Education)  
in the University of Education, Winneba**

**JANUARY, 2026**

## DECLARATION

### Student's Declaration

I, **Victoria Oyebisi**, hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Signature: .....

Date: .....

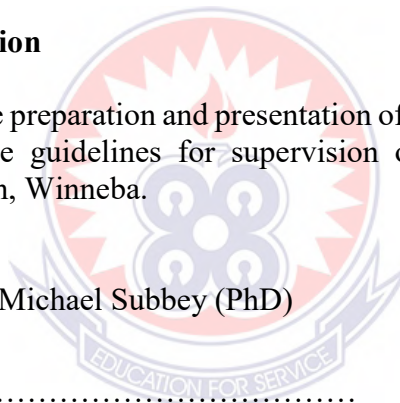
### Supervisor's Declaration

I hereby declare that the preparation and presentation of this thesis work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

**Supervisor:** Professor Michael Subbey (PhD)

**Signature:** .....

**Date:** .....



## **DEDICATION**

To my mother and Siblings



## ACKNOWLEDGEMENTS

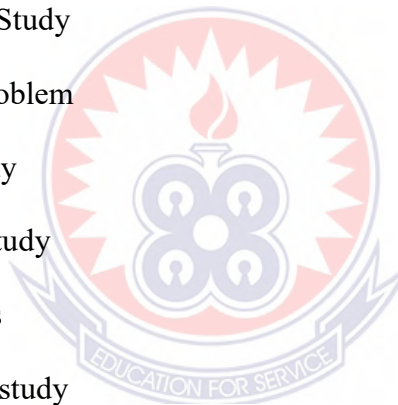
I would like to express my deepest appreciation to Professor Michael Subbey, whose invaluable supervision, guidance, and unwavering support brought this work to completion. His mentorship not only sharpened my academic focus but also inspired me to pursue excellence throughout this journey. His insightful feedback, constructive criticisms, and constant encouragement have been instrumental in shaping the quality and direction of this research.

My special thanks goes to everyone who contributed in one way or another—whether through advice, moral support, or encouragement—I am deeply grateful. Your contributions have left a lasting impact on this work and on me personally. May God richly bless you all. I remain forever indebted.



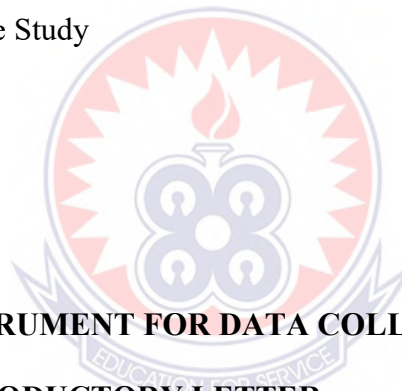
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## ABSTRACT

The purpose of this study was to explore how kindergarten teachers in the Sagnerigu Municipality use play-based methods in teaching numeracy to young learners. The researcher adopted the quantitative research approach. Descriptive survey research design was adopted. The target population for this study consisted of all kindergarten teachers in Sagnerigu Municipal in the Northern Region, with a Population of 270 teachers, Krejcie and Morgan sampling techniques was used to sample 159 respondents for the study, the instrument used was a structured questionnaire. The Statistical Package for Social Sciences (SPSS) software was used to analyze the quantitative data. The study revealed that the availability of material resources to support play-based pedagogy in Sagnerigu Municipality is limited. Many kindergarten teachers reported insufficient access to age-appropriate play materials, such as educational toys, learning aids, and outdoor play equipment. As a result, teachers often resorted to using locally made or improvised materials, which may not fully align with the pedagogical objectives of play-based learning. The findings revealed that most kindergarten teachers in Sagnerigu Municipality had not received formal training on play-based pedagogy. While some teachers had attended brief workshops or in-service training, the majority reported a lack of specialized training on how to effectively integrate play into the curriculum. The study highlighted several critical factors influencing the implementation of play-based pedagogy in Sagnerigu Municipality. The findings revealed that while material resources and teacher training are limited, there is a strong need for more support in these areas. Teachers face various challenges, including overcrowded classrooms, limited time for play, and a lack of community support. However, strategies such as increasing access to resources, providing targeted professional development, and fostering collaboration among teachers were identified as essential for improving the implementation of play-based learning. Addressing these issues will be crucial for enhancing the quality of early childhood education in the municipality. The study recommended that Headteachers work closely with the GES to secure funding and resources for play-based activities, such as toys, educational games, and outdoor play equipment. Additionally, the Ministry of Education should prioritize the allocation of materials specifically designed for play-based learning in the early childhood education sector. It is recommended that the GES and the Ministry of Education invest in continuous professional development for kindergarten teachers in the Sagnerigu Municipality, focusing specifically on play-based pedagogy

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Early childhood education plays a critical role in shaping a child's cognitive, social, and emotional development. Among the key areas of early education, numeracy is one of the most important foundations for future academic success. Numeracy in early childhood is not just about teaching children to count, but it involves developing a broad range of mathematical concepts such as recognizing numbers, understanding patterns, shapes, and basic operations. These skills are essential for problem-solving and critical thinking, which children will need as they advance in their education (Clements & Sarama, 2014).

In recent years, there has been a growing recognition of the importance of play-based learning, especially in early childhood education. Play is a powerful tool that allows young children to explore, experiment, and learn in an interactive and engaging way. According to Pyle and Bigelow (2015), play in early childhood education not only supports cognitive development but also enhances social skills and emotional well-being. Play-based learning encourages children to interact with their environment and learn concepts in a meaningful context, which has been shown to improve their numeracy skills (Bodrova & Leong, 2007). By using play in teaching numeracy, children can engage in activities that involve counting, sorting, matching, measuring, and more, all of which help build foundational math skills.

In the Sagnerigu Municipality of the Northern Region, early childhood education is vital as it provides young children with the opportunity to develop these essential skills. However, the integration of play-based pedagogy in teaching numeracy may not be fully realized. Many teachers may not have access to the necessary resources, or may lack sufficient training in effectively using play to teach mathematical concepts. This can limit the potential benefits of play-based learning in improving numeracy outcomes (Chard, 2009). Teachers' perceptions of play-based learning and their training in this area may influence how they incorporate play into their teaching practices, and this variation can affect the effectiveness of numeracy instruction.

Previous studies have shown that many teachers in developing regions, such as the Northern Region of Ghana, face several challenges when it comes to using play-based approaches. These challenges include limited access to teaching materials, lack of professional development, and large class sizes, which hinder the effective use of play in the classroom (Osei, 2014). In Sagnerigu Municipality, while there is an emphasis on improving early childhood education, it remains unclear how kindergarten teachers in the area are integrating play into their numeracy instruction. Therefore, it is important to explore how these teachers use play, what materials and resources they have access to, and the challenges they face in implementing play-based methods to teach numeracy.

This study aims to fill this gap by investigating the use of play in teaching numeracy among kindergarten teachers in Sagnerigu Municipality. By examining the availability of play resources, the training teachers receive, and the strategies they use, this research will provide valuable insights into how play can be better integrated into numeracy instruction. The findings will contribute to the understanding of how play-based

methods can enhance numeracy skills in young children and inform policy and practice to improve early childhood education in the region.

Emotionally, play is a vital avenue for children to express their feelings and cope with stress. It offers a safe space for children to navigate their emotions and develop resilience. For example, through imaginative play, children can process and make sense of their experiences, which can be therapeutic (Russ, 2004). Additionally, play contributes to emotional regulation by allowing children to experience and manage a range of emotions in a controlled environment (Denham, Bassett, & Wyatt, 2007).

Physically, play is crucial for the development of motor skills. Activities such as running, jumping, and climbing not only strengthen children's muscles but also enhance their coordination and balance. Fine motor skills are also developed through play activities that involve manipulating small objects, such as drawing or using building blocks (Ginsburg, 2007). These physical activities are essential for overall health and well-being, promoting active lifestyles from a young age.

The global recognition of the importance of play in early childhood education has led to its incorporation into various educational frameworks and curricula. In many countries, play-based learning is integrated into early childhood programs, emphasizing its role in fostering a well-rounded development. Research has shown that children in play-based programs perform better in various developmental domains compared to those in more academically oriented programs (Marcon, 1999).

Play-based pedagogy in early childhood education has garnered significant attention due to its potential to enhance children's holistic development (Dalli et al., 2011). However, the successful implementation of such pedagogical approaches relies heavily

on teachers' attitudes and beliefs towards them. In the context of Sagnerigu Municipality in the Northern Region, understanding kindergarten teachers' attitudes towards play-based methods is crucial for optimizing educational practices. Previous research suggests that teacher attitudes towards play-based pedagogy can vary significantly, influenced by factors such as training, experience, and cultural norms (Ernest, 2017; Li, 2020). While some educators embrace play-based approaches for fostering creativity, social skills, and cognitive development (Dewey, 1938; Hirsh-Pasek et al., 2009), others may harbor reservations, perceiving structured, academic-focused methods as more effective (Miller & Almon, 2009).

However, the implementation of play-based pedagogy varies across different educational contexts. Factors such as cultural beliefs, educational policies, and available resources influence how play is incorporated into early childhood education (Wood, 2014). For instance, in some cultures, there is a strong emphasis on academic achievement from an early age, which can limit opportunities for play. Educators and policymakers must therefore advocate for balanced approaches that value both academic learning and the developmental benefits of play.

Teaching experience significantly influences teachers' attitudes towards play-based pedagogy. Teachers who have been in the profession for many years often see the benefits of play in promoting children's learning and development. These experienced teachers tend to be more supportive of play-based approaches (Pyle & Danniels, 2017). They have seen firsthand how play can help children understand complex concepts, develop social skills, and enhance creativity. For example, when children engage in role-playing games, they not only enjoy themselves but also learn to communicate,

negotiate, and collaborate with their peers. This practical experience helps veteran teachers appreciate the value of play in the classroom.

In contrast, less experienced teachers might be more hesitant about using play-based strategies. They may lack the confidence or practical knowledge needed to implement these approaches effectively. Without enough classroom experience, they might feel unsure about managing play activities or integrating them with the curriculum. This hesitation can stem from a fear of losing control of the classroom or not meeting academic standards. As a result, novice teachers might rely more on traditional, structured teaching methods, which they perceive as safer and more manageable.

In the Sagnerigu Municipality, a potential solution to this challenge is the implementation of mentoring programs. These programs can pair experienced teachers with less experienced ones, providing support and guidance. Through mentoring, new teachers can observe and learn from their seasoned colleagues. They can see how play-based pedagogy is applied in real classroom settings and understand its benefits in promoting children's holistic development. Mentors can share practical tips, resources, and strategies, helping novices build their confidence and skills in using play-based methods.

For instance, an experienced teacher might demonstrate how to set up and facilitate a play-based learning center in the classroom. They could show how to create activities that align with educational goals, such as using building blocks to teach math concepts or storytelling to enhance language skills. By observing these practices, less experienced teachers can learn effective ways to integrate play into their teaching.

Moreover, mentoring programs can provide a platform for ongoing professional development. Through regular meetings and discussions, mentors and mentees can reflect on their experiences, share successes and challenges, and collaboratively find solutions. This continuous support helps less experienced teachers gradually become more comfortable and proficient in using play-based strategies.

Overall, the influence of teaching experience on attitudes towards play-based pedagogy is significant. While experienced teachers generally support this approach due to their positive experiences, less experienced teachers may need additional support and guidance. Mentoring programs in places like the Sagnerigu Municipality can play a crucial role in bridging this gap, fostering a more positive attitude towards play-based pedagogy among all teachers. This, in turn, can lead to more effective and engaging learning experiences for children, promoting their development and love for learning (Pyle & Danniels, 2017).

Understanding the interest levels of kindergarten teachers in play-based teaching techniques is crucial. This interest can be influenced by several factors, including teacher training, exposure to play-based pedagogical strategies, and perceived benefits for students. Research suggests that teachers' personal beliefs about the effectiveness of play in education significantly shape their willingness to integrate these methods (Pyle & Bigelow, 2015).

Teacher training plays a vital role in shaping educators' attitudes toward play-based learning. When teachers receive comprehensive training that highlights the theoretical foundations and practical applications of play-based pedagogy, they are more likely to appreciate its value and incorporate it into their teaching practices (Howard, 2010).

Training programs that include hands-on workshops, demonstrations, and opportunities

to observe play-based learning in action can significantly enhance teachers' confidence and competence in using these techniques (Wood, 2014). Additionally, continuous professional development opportunities that keep teachers updated on the latest research and innovative practices in play-based education can further bolster their interest and commitment (Edwards, 2017).

Exposure to play-based pedagogical strategies is another critical factor influencing teachers' interest levels. Teachers who have had positive experiences with play-based learning, either through their own practice or through observing successful implementations by peers, are more likely to adopt these methods (Samuelsson & Carlsson, 2008). Classroom observations, peer mentoring, and collaborative planning sessions can provide teachers with practical insights and inspiration, reinforcing the benefits of play-based learning (Broadhead, 2010). This exposure helps in building a supportive community of practice where teachers can share ideas, challenges, and successes, thereby fostering a collective interest in play-based approaches (Rogers & Evans, 2008).

Perceived benefits for students are a significant motivator for teachers to embrace play-based teaching techniques. When teachers recognize the positive outcomes of play on children's cognitive, social, emotional, and physical development, they are more inclined to integrate play into their curricula (Miller & Almon, 2009). Research has shown that play enhances children's creativity, problem-solving skills, social interactions, and emotional well-being, which are critical components of holistic development (Ginsburg, 2007). Teachers who witness these benefits firsthand are likely to become advocates for play-based learning, striving to create enriched learning

environments that cater to the diverse needs of young children (Jones & Reynolds, 2011).

However, teachers' personal beliefs about the effectiveness of play in education are pivotal in determining their interest in and commitment to play-based pedagogy. According to Pyle and Bigelow (2015), teachers who view play as a legitimate and valuable educational tool are more likely to integrate it into their teaching practices. Conversely, teachers who perceive play as merely recreational and not conducive to learning may be reluctant to adopt play-based methods (Pyle & Danniels, 2017). Addressing these beliefs through targeted professional development and evidence-based research can help shift perceptions and promote the adoption of play-based pedagogies.

The extent to which kindergarten teachers incorporate play-based activities into their lesson plans and curriculum is indicative of their pedagogical practices. Effective incorporation involves a structured approach where play is intentionally used to meet educational goals. Studies have shown that when play is integrated into the curriculum, it enhances engagement and learning outcomes (Smith & Pelligrini, 2008). However, the actual implementation can vary widely depending on resources, support, and understanding of play-based learning principles.

Effective incorporation of play-based activities requires teachers to carefully plan and structure play to align with educational objectives. This structured approach ensures that play is not just a free-for-all activity but a meaningful part of the learning process. For example, incorporating role-playing activities can help children develop language skills and social competence as they navigate different scenarios and characters (Bodrova & Leong, 2007). Similarly, using building blocks can enhance spatial

awareness and mathematical thinking as children explore shapes, sizes, and patterns (Ginsburg, 2007). By designing play activities with clear learning outcomes in mind, teachers can create a balanced curriculum that fosters both academic and developmental growth (Hirsh-Pasek et al., 2009).

Research supports the notion that play-based learning enhances engagement and learning outcomes. Children are naturally curious and motivated to explore their environment through play, which leads to higher levels of engagement compared to traditional, teacher-directed instruction (Miller & Almon, 2009). When children are engaged, they are more likely to retain information and develop a love for learning. For instance, play-based approaches to literacy, such as interactive storytelling and dramatic play, have been shown to improve children's language development and reading skills (Christie & Roskos, 2009). Furthermore, play-based learning can promote social-emotional development by encouraging cooperation, empathy, and conflict resolution (Denham, Bassett, & Wyatt, 2007).

However, the implementation of play-based activities can vary widely among teachers and schools. Several factors contribute to this variability, including access to resources, administrative support, and teachers' understanding of play-based learning principles. Schools with ample resources can provide a variety of materials and spaces conducive to play, such as playgrounds, art supplies, and educational toys, which facilitate the integration of play into the curriculum (Wood, 2014). In contrast, schools with limited resources may struggle to offer diverse play opportunities, affecting the quality and scope of play-based learning (Ginsburg, 2007).

Administrative support is also crucial for successful implementation. When school leaders prioritize play-based learning and provide ongoing professional development

for teachers, it fosters a school culture that values and supports play as a vital part of education (Howard, 2010). Professional development can help teachers understand the theoretical foundations of play-based learning, observe effective practices, and gain confidence in integrating play into their teaching (Edwards, 2017). Without such support, teachers may feel pressured to focus on more traditional, test-oriented methods, especially in environments where academic performance is heavily scrutinized (Pyle & Bigelow, 2015).

Teachers' understanding and beliefs about play-based learning significantly impact how they implement it in their classrooms. Those who recognize the educational benefits of play are more likely to design and facilitate meaningful play experiences (Pyle & Danniels, 2017). Conversely, teachers who view play as merely recreational may not fully integrate it into their lesson plans, missing opportunities to harness its educational potential (Pyle & Bigelow, 2015).

Implementing play-based teaching techniques can present several challenges. These challenges may include limited resources, large class sizes, and insufficient training in play-based methodologies. Additionally, cultural attitudes towards education and play may impact how these techniques are received and practiced (Fleer, 2010). Addressing these barriers requires targeted interventions, such as professional development and policy support, to create an enabling environment for play-based learning.

One of the primary challenges in implementing play-based teaching techniques is limited resources. Schools and early childhood education centers often face budget constraints that limit their ability to provide the necessary materials and spaces conducive to play-based learning. For instance, high-quality play equipment, art supplies, and outdoor play areas can be costly, and without adequate funding, schools

may struggle to offer diverse and engaging play opportunities (Wood, 2014). Moreover, the lack of resources can also affect the teacher-student ratio, which is crucial for effective play-based learning. In overcrowded classrooms, teachers may find it difficult to facilitate and supervise play activities, leading to a less effective implementation of play-based methods (Ginsburg, 2007).

Large class sizes present another significant challenge. When the number of students per class is too high, it becomes increasingly difficult for teachers to manage and engage all children effectively in play-based activities. Large classes can lead to a chaotic environment where meaningful, guided play becomes challenging to execute. Teachers may find it hard to give individual attention and support to each child, which is essential for addressing the diverse learning needs present in a classroom (Blatchford, Bassett, & Brown, 2011). Reducing class sizes or increasing the number of teaching assistants can help mitigate this issue, allowing for more effective and personalized play-based learning experiences (Finn, Gerber, & Boyd-Zaharias, 2001).

Insufficient training in play-based methodologies is another barrier that teachers often face. Many educators may not have received adequate training in how to incorporate play effectively into their teaching practices. This lack of preparation can lead to uncertainty and reluctance to adopt play-based approaches, as teachers might not feel confident in their ability to facilitate and guide play activities in an educationally meaningful way (Howard, 2010). Comprehensive professional development programs that focus on the principles and practices of play-based learning can equip teachers with the necessary skills and knowledge, enhancing their confidence and competence in using these techniques (Edwards, 2017).

Cultural attitudes towards education and play also play a critical role in the acceptance and implementation of play-based teaching techniques. In some cultures, there is a strong emphasis on formal academic learning from an early age, which can lead to a perception of play as non-essential or frivolous (Fleer, 2010). This cultural bias can result in resistance from both educators and parents, who may prioritize traditional, structured learning activities over play-based methods. To address this, it is important to raise awareness about the benefits of play in early childhood education through community engagement and educational campaigns (Rogers & Evans, 2008).

Policy support is essential for overcoming these barriers and promoting the widespread adoption of play-based teaching techniques. Policymakers can play a crucial role by allocating funds for resources, supporting smaller class sizes, and mandating professional development in play-based methodologies. Additionally, educational policies that recognize and emphasize the importance of play in early childhood development can help shift cultural attitudes and create a more supportive environment for play-based learning (Wood, 2014).

Teachers' attitudes towards the role of play in fostering holistic child development and academic readiness are critical. Positive attitudes often correlate with higher implementation levels of play-based activities. Research highlights that when teachers view play as essential to development, they are more likely to prioritize and advocate for its inclusion in the curriculum (Saracho & Spodek, 2006). Understanding these attitudes can help tailor interventions to support teachers in adopting play-based pedagogies

When teachers perceive play as essential to children's development, they are more likely to prioritize and advocate for its inclusion in their teaching practices. This

perspective is supported by extensive research demonstrating the multifaceted benefits of play. For instance, play has been shown to enhance cognitive, social, emotional, and physical development in children (Ginsburg, 2007). It provides opportunities for children to develop critical thinking and problem-solving skills, engage in social interactions, and express their emotions in a safe environment (Fisher, 1992). Moreover, play is instrumental in fostering creativity and imagination, which are crucial for overall intellectual growth (Russ, 2003).

Understanding teachers' attitudes towards play is therefore essential for developing effective interventions that support the adoption of play-based pedagogies. Professional development programs that emphasize the importance of play and provide teachers with the skills and knowledge to implement play-based activities can lead to more positive attitudes and greater integration of play in the classroom (Nixon & Gould, 1999). Such programs can also address potential barriers that teachers may face, such as a lack of resources, time constraints, or pressure to focus on academic outcomes (Wood, 2014).

Research indicates that when teachers receive adequate training and support, they are more likely to recognize the value of play and incorporate it into their teaching practices. For example, a study by Edwards (2017) found that teachers who participated in professional development programs that focused on play-based learning were more confident in their ability to integrate play into their curriculum and more committed to advocating for its importance. This underscores the need for ongoing professional development and support for teachers to ensure they have the necessary tools and resources to effectively implement play-based pedagogies.

In addition to professional development, school policies and leadership play a crucial role in shaping teachers' attitudes towards play. Schools that prioritize play and allocate

sufficient time and resources for play-based activities create an environment that supports teachers in their efforts to integrate play into their teaching practices (Pyle & Danniels, 2017). Leadership that values and promotes play as a fundamental component of early childhood education can positively influence teachers' attitudes and behaviors towards play.

Furthermore, parental attitudes towards play can also impact teachers' attitudes and practices. When parents understand and appreciate the importance of play in their children's development, they are more likely to support teachers' efforts to incorporate play into the curriculum (Fisher, 2008). Engaging parents through workshops and communication about the benefits of play can help create a supportive community that values and advocates for play-based learning.

## **1.2 Statement to the Problem**

Play-based pedagogy is widely recognized as an effective approach for enhancing early childhood learning outcomes. It fosters cognitive, social, and emotional development by engaging children in active, experiential learning processes (UNICEF, 2018). However, in the Sagnerigu Municipality of the Northern Region, the use of play-based pedagogy among kindergarten teachers appears limited, raising concerns about the quality of early childhood education in the area. Based on personal observation, several issues hinder the effective implementation of this teaching approach, necessitating an exploration of teachers' attitudes and the contextual barriers they face.

For example, a guided play approach, where the teacher intentionally uses play activities such as storytelling games, number matching with blocks, role-play, and song-based activities to teach literacy and numeracy concepts, is a core component of

play-based pedagogy. In this approach, the teacher actively facilitates children's play by setting learning objectives, providing appropriate materials, and asking guiding questions to support cognitive, language, and social development

During visits to several early childhood centers, it was evident that many classrooms lack the basic materials needed to foster engaging and interactive learning environments. For instance, at one school located in a densely populated urban area, the only available resources were outdated charts and a handful of plastic bottles repurposed as play materials. The teacher lamented the absence of sufficient resources, noting that the lack of materials limits her ability to implement creative and interactive teaching strategies. Similarly, in a rural school visited by the researcher, outdoor play equipment such as swings and slides were broken and left unrepaired for years. This situation not only reduces opportunities for physical activity but also negatively impacts children's holistic development.

Moreover, even in schools where TLMs are available, the quantity and quality of the resources are often inadequate. In one instance, a kindergarten classroom with over 40 pupils shared only one set of building blocks, making it impossible for all children to participate meaningfully in play activities. Teachers in the municipality reported that they frequently have to improvise, using items such as stones and sticks to substitute for proper materials. While this ingenuity reflects the commitment of teachers, it falls short of providing the rich and stimulating learning experiences that play-based pedagogy is designed to deliver. Teachers reported that due to the lack of appropriate play-based learning materials, they often improvised using items such as stones and sticks. Although this reflects teachers' commitment and positive attitude toward play-

based pedagogy, the improvised materials were inadequate to provide rich and engaging learning experiences for children.

The inadequate availability of TLMs is further compounded by a lack of funding and institutional support for early childhood education in the municipality. Teachers explained that they rarely receive financial or material support to procure new resources or maintain existing ones. In addition, parent-teacher associations (PTAs) in most schools lack the financial capacity to contribute significantly to addressing these resource gaps. The situation is worsened in rural schools, where poverty levels and limited access to external support exacerbate the problem.

The levels of training received by kindergarten teachers on the use of play-based pedagogy in the Sagnerigu Municipality remain a significant challenge to the effective implementation of this child-centered teaching approach. Play-based pedagogy is widely regarded as an essential method for enhancing cognitive, social, and emotional development in young learners (UNICEF, 2018). However, personal observations and interactions with kindergarten teachers in the Sagnerigu Municipality reveal a lack of adequate training opportunities to equip educators with the skills and knowledge necessary to incorporate play effectively into their teaching practices.

The researchers' personal interactions with some teachers in the municipality, it became evident that many kindergarten teachers were unfamiliar with the principles and strategies of play-based pedagogy. In discussions with teachers, many admitted that they had not received formal training on how to integrate play into their lessons effectively. Some teachers mentioned relying on traditional, lecture-based methods because they lacked the confidence and skills to implement more interactive and child-

centered approaches. For instance, one teacher stated, "I know play is important, but I don't know how to use it to teach reading and other subjects effectively."

Further evidence of the problem emerged when it was noted that most kindergarten teachers in the municipality had limited access to professional development programs or workshops focusing on play-based teaching methods. In some cases, teachers reported that the only training they had received was during their pre-service education, which often lacked a practical focus on early childhood methodologies. Continuous professional development programs, which are crucial for updating teachers on current trends and best practices, were either unavailable or inconsistently organized.

The lack of training also manifests in the quality of classroom instruction. Observations revealed that even when teachers attempted to incorporate play, the activities were often unstructured and lacked clear learning objectives. This undermines the potential of play to support meaningful learning outcomes. For example, in one classroom, children were given toys to play with while the teacher focused on administrative tasks, rather than guiding the activity to foster language, numeracy, or social skills.

The inadequate training of kindergarten teachers has broader implications for early childhood education in the municipality. Without proper training, teachers struggle to create engaging and stimulating learning environments that cater to the developmental needs of young learners. This can lead to a lack of interest and motivation among children, ultimately affecting their foundational learning outcomes.

Addressing the issue of inadequate training requires targeted interventions, such as regular in-service training workshops, collaboration with early childhood education experts, and the incorporation of play-based pedagogy modules into teacher education

curricula. Providing teachers with the necessary skills and confidence to implement play-based pedagogy will not only enhance classroom practices but also contribute to improving the overall quality of early childhood education in the Sagnerigu Municipality.

One significant challenge observed is the lack of adequate teaching and learning materials (TLMs) to support play-based activities. During visits to several schools, the researcher noticed that most classrooms lacked essential resources such as building blocks, puzzles, and storybooks, which are fundamental for facilitating meaningful play-based learning. For instance, in one school located in a rural area, the available play materials were limited to a few worn-out toys, many of which were broken and unsafe for use. Teachers expressed frustration over the lack of funding to procure or maintain these materials, which often forces them to rely on rote teaching methods rather than interactive, child-centered approaches. This scarcity of resources aligns with findings by Owusu et al. (2019), who identified material constraints as a significant barrier to innovative teaching practices in Ghanaian schools.

Another critical issue is the insufficient training of teachers in play-based pedagogy. Many kindergarten teachers in the municipality lack the requisite skills and knowledge to effectively integrate play into their teaching practices. In conversations with teachers, it was evident that most had not received formal training in play-based methods, and the few who had found the training to be inadequate. One teacher shared that while she understood the concept of play-based pedagogy, she struggled to implement it due to a lack of practical guidance during training. This inadequacy is further compounded by the absence of regular in-service training to update teachers on modern pedagogical trends, leaving them ill-equipped to address the diverse learning needs of their students.

Additionally, overcrowded classrooms present a significant challenge for kindergarten teachers in the municipality. Classrooms with pupil-to-teacher ratios exceeding 50:1 make it difficult to organize and supervise effective play-based activities. In one observed case, a teacher expressed concern over the difficulty of managing large groups of children during play sessions, as it often resulted in chaotic and unproductive learning environments. This issue not only limits the effectiveness of play-based pedagogy but also increases teachers' workload and stress levels, further discouraging its implementation.

Cultural perceptions about play in education also hinder the adoption of play-based pedagogy. Some parents and community members view play as a frivolous activity, unrelated to academic success. Teachers shared that this misconception leads to pressure to focus on traditional methods such as writing and memorization, at the expense of play-based learning. This cultural resistance poses a challenge for teachers who strive to balance community expectations with effective pedagogical practices.

This study seeks to explore kindergarten teachers' attitudes towards play-based pedagogy in the Sagnerigu Municipality by focusing on the availability of material resources, the level of teacher training, the challenges faced, and potential strategies for effective implementation. Understanding these factors is critical for enhancing the quality of early childhood education in the municipality and ensuring that children benefit from holistic, child-centered learning experiences. Insights from this study will contribute to bridging the gap between policy and practice in the adoption of play-based pedagogy in Ghana.

### **1.3 Purpose of the Study**

The purpose of this study was to explore how kindergarten teachers in the Sagnerigu Municipality use play-based methods in teaching numeracy to young learners.

### **1.4 Objectives of the Study**

The objectives of the study are to:

1. Assess the availability of teaching and learning materials that support play-based pedagogy in kindergarten classrooms in the Sagnerigu Municipality.
2. Evaluate the level of training and professional development received by kindergarten teachers in the use of play-based pedagogy.
3. Identify the challenges faced by kindergarten teachers in implementing play-based pedagogy in the Sagnerigu Municipality.
4. Explore effective strategies for enhancing the implementation of play-based pedagogy in kindergarten classrooms.

### **1.5 Research Questions**

1. What is the availability of material resources that support play-based pedagogy in the Sagnerigu Municipality?
2. To what extent have kindergarten teachers in Sagnerigu Municipality been trained to effectively implement play-based pedagogy?
3. What are the key challenges faced by kindergarten teachers in Sagnerigu Municipality when implementing play-based pedagogy?
4. What strategies can support the effective implementation of play-based pedagogy in the Sagnerigu Municipality?

### **1.6 Significance of the study**

The study will highlight the availability and condition of material resources in kindergarten classrooms, providing insights on the need for adequate learning tools that support play-based pedagogy. This information can guide policymakers and stakeholders in the Sagnerigu Municipality to allocate resources effectively to enhance early childhood education.

The study will identify gaps in professional development related to play-based pedagogy. This will inform the design of targeted training programs to equip teachers with the skills and knowledge needed to implement play-based teaching methods effectively.

The research will uncover the challenges faced by kindergarten teachers when attempting to use play-based pedagogy. Understanding these barriers will allow for the development of practical solutions to support teachers in overcoming these obstacles and improving the quality of early childhood education.

The study will propose strategies for improving the implementation of play-based pedagogy in the Sagnerigu Municipality. These strategies will help create a more conducive learning environment, fostering better educational outcomes for young children in the region.

### **1.7 Delimitations of the Study**

The study was delimited to kindergarten teachers in the Sagnerigu Municipality of the Northern Region and did not include teachers from other educational levels such as primary or junior high schools. This delimitation was necessary to ensure a focused investigation on the specific developmental stage where play-based pedagogy is most

relevant. By concentrating on this group, the study was able to explore in depth the attitudes, challenges, and needs of those directly responsible for implementing play-based pedagogy, without the added variability introduced by teachers at higher educational levels, where teaching methods and curricula differ substantially.

Furthermore, the study focused specifically on kindergarten teachers' attitudes towards the use of play-based pedagogy. Attitude was selected as the primary focus because it directly influences teachers' willingness, commitment, and effectiveness in applying play-based methods in the classroom. By delimiting the study to attitudes rather than including other factors such as knowledge, administrative policies, or student outcomes, the research maintained a clear and manageable scope while generating insights that could inform targeted interventions, professional development, and resource allocation within the municipality.

Additionally, concentrating on a single municipality the Sagnerigu Municipality allowed the study to account for local contextual factors, including resource availability, teacher training opportunities, classroom sizes, and socio-cultural perceptions of play. Expanding the study to other districts or regions could have introduced additional variability, making it difficult to draw meaningful conclusions specific to the local context. Therefore, these delimitations were critical for ensuring the depth, clarity, and applicability of the research findings within the intended educational setting.

### **1.8 Limitations of the Study**

One of the limitations encountered in this study was that some teachers did not respond to all the items in the questionnaire. This resulted in a few incomplete responses, which slightly affected parts of the data analysis. However, the number of completed

questionnaires received was adequate to provide reliable data for the study and to address the research objectives.

Another limitation was the initial hesitation of some schools to permit the distribution of the questionnaires. This reluctance created challenges during the data collection process and delayed access to some participants. It also limited the researcher's opportunity to fully observe and understand certain classroom practices related to the use of play-based pedagogy. Despite these challenges, the researcher made additional efforts to engage the schools, explained the purpose of the study, and adopted alternative approaches to ensure that sufficient data was collected.

Although these limitations posed some difficulties, they did not significantly affect the overall outcome of the study, as enough valid data was gathered to meet the objectives of the research.

### **1.9 Operational definition of key terms**

**Early childhood Education (ECE):** Early childhood education refers to any group program in a center, school or other facility that serves children from birth through to age 8

**Pedagogical approaches:** The approaches methods strategies and appropriate relevant teaching and learning resources for ensuring that every learner benefits from teaching and learning process.

**Play:** Play is a range of intrinsically motivated activities done for recreational pleasure and enjoyment.

**Play based pedagogy (PBp):** It is a program that build on motivation where children can explore, experiment, discover, and solve problems in imaginative and playful way.

**Numeracy:** Numeracy refers to the ability to understand, interpret, and apply basic mathematical concepts such as counting, sorting, comparing quantities, recognizing patterns, and performing simple calculations relevant to everyday life.

### **1.10 Organization of the Study**

The study consists of five chapters. Chapter one concentrated on the introduction, discussed the background to the study, outlined the statement to the study, purpose of the study, research objectives, research questions, significance of the study, delimitation, limitations of the study and definition of terms. Chapter Two presented a review of related literature. Chapter Three explained the methodology used for the study, and it looked at philosophical foundation of the study, approaches research design, population, sample and sampling techniques, instrument for data collection, validity and reliability, data collection procedure, data analysis procedure, data integration and ethical considerations. Chapter Four focused on the findings and analysis of the results. Lastly, Chapter Five discussed the results, conclusions, and give recommendations based on the study's findings

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.0 Introduction**

This chapter concentrates on a review of literature relevant to the study under the following subtopics:

1. Concept of play based learning
2. The Availability of Material Resources that Support Play-Based Pedagogy in Sagnerigu Municipality
3. Levels of Training Received by Kindergarten Teachers
4. Challenges Kindergarten Teachers Face When Using Play-Based Pedagogy
5. Strategies That Can Help in the Implementation of Play-Based Pedagogy

#### **2.1 Theoretical Framework**

##### **2.1.1 Socio-Cultural Theory by Lev Vygotsky 1978**

While there is no universally accepted definition of play, theories have been established that consider play as a social construct (Samuelsson and Fler, 2010). Vygotsky, in particular, emphasized the role of play in facilitating children's conscious understanding of concepts. He proposed that social interactions lead to continuous developmental changes in children's thinking and behaviour, which may vary across different cultures (Langford, 2024; McLeod, 2014). This suggests that a child's development is influenced by the opportunities provided by their society, which contribute to the formation of their own perspectives. Vygotsky also highlighted the prevalence of pretend play in preschool and early elementary school, emphasizing its importance in cognitive, social, and emotional development (Hostettler, 2017).

According to Vygotsky, the use of culturally and intellectually established tools such as language, writing, numerical systems, and scientific concepts is essential for children's intellectual development (Bodrova and Leong 2017). When children have the freedom to actively engage with cultural traditions, they are more likely to adopt them and develop autonomy and active learning. For example, a child from a different cultural background may acquire multiple languages as their language and speech skills develop. This highlights the dynamic interaction between external sociocultural influences and internal developmental forces in children's growth (McNaughton, 2013). However, Vygotsky's perspective on play, particularly sociodramatic play, challenges the common belief that play is a free, unstructured activity where children disengage from societal norms and demands (Berk, Mann & Ogan 2016). Instead, Vygotsky viewed children's play as imaginative and dramatic, involving role-playing and the enactment of rules (Bodrova and Leong 2017).

Play should not be regarded merely as entertainment (Fesseha and Pyle, 2016). Theorists have emphasized that play is closely linked to child development, often referred to as the cognitive processes that drive a child to progress to the next stage (Thomas Warren and DeVries 2011). Vygotsky criticized the tendency to intellectualize play, as he believed that understanding a child's ideas and behaviours requires consideration of their inner needs and motives. Neglecting these factors makes it difficult to comprehend how children advance developmentally (Vygotsky, 2016).

Vygotsky identified three essential elements of real play: the establishment of an imaginative scenario, role-playing, and adherence to rules established by specific roles (Bodrova & Leong 2017).). In Vygotsky's view, play involves pre-arranged role-playing and a fabricated situation with clear roles and rules. Initially, the rules may be implicit but become explicit and negotiated by the children as the play progresses. Children also

establish boundaries for their own behavior during play, marking the beginning of self-regulation (Bodrova & Leong 2017).). Scholars following the Vygotskian approach argue that this type of play promotes significant learning in early childhood education as it becomes more complex (Bodrova, 2008; Elkonin, 2015). Furthermore, make-believe play allows children to differentiate between the visible and inferred aspects of the world, enabling them to decontextualize meaning (Sherwood 2009). Play separates the mind and object, with activities rooted in concepts rather than physical objects. For instance, a stick can transform into a horse, and a piece of wood can become a doll. Play connects the child to the current situation while enabling the establishment of norms based on concepts rather than physical objects (Van Oers & Duijkers 2013). According to Vygotsky, this marks the initial steps toward the development of higher mental functions and language thinking, which are crucial for a child's school readiness (Gajdamaschko, 2011; Karpov, 2013; Smidt, 2019).

While the relationship between play and development is similar to that between instruction and development, Vygotsky considered play to be the dominant activity, providing a broader context for changes in desires and consciousness (Bodrova and Leong 2017). Play represents the most advanced stage of preschool development as it incorporates imaginative activities, the formulation of voluntary goals, and the creation of real-world plans and volitional impulses (Taylor and Boyer 2020). Vygotsky argued that a child's fundamental advancement occurs through play activities, positioning play as the leading activity guiding a child's development Taylor & Boyer 2020).

Vygotsky further proposed that play enables children to satisfy their cravings for power, control, and the ability to effect change, which may be challenging in their everyday lives. Through play, children can determine their zone of proximal development (ZPD), which represents the gap between what they can accomplish independently and what

may require assistance. The ZPD is influenced by interactions and social experiences with adults. Vygotsky claimed that during play, a child assumes a position beyond their chronological age and typical behaviour, as if they were "a head taller than themselves." According to Vygotsky, "appropriation and ownership" in children's play refers to the internalization and assimilation of their interests. To maintain engagement, children must be deeply absorbed in the activity. When children engage in purposeful play, they create rules to explain and regulate their enjoyment, which is a crucial stage in pedagogy how to direct their own activities. Thus, teachers can use these insights to further encourage and enrich children's play when they need to intervene during adult role-play activities teachers can use these insights to further encourage and enrich children's play when they need to intervene during adult role-play activities (Van Oers, 2013)

Despite mounting evidence supporting the benefits of play-based pedagogy, many early childhood education settings continue to adopt rigid curricula based on standards and standardized tests. Play is being sidelined in many of these settings due to the pressures on kindergarten students and teachers to achieve curriculum goals. As a result, students have limited or no time for play, and teachers struggle to incorporate play into their lessons. Additionally, some school administrators fail to appreciate the value of play and perceive it as a waste of class time (Miller & Almon, 2019).

In view of the ideology of this theory which emphasize the importance of play based pedagogies and help in cognitive, social, and emotional development of learners, teachers need to have vast training in play activities which in turn improve their views towards the use of play pedagogies. Since there is a gap between what capacity teachers have, their views and attitude toward the use of play based pedagogies.

Lev Vygotsky's Socio-Cultural Theory (1978) relates strongly to the study on kindergarten teachers' attitudes towards the use of play-based pedagogy in Sagnerigu Municipality. Vygotsky believed that children learn best when they are actively involved in social interactions and meaningful activities within their cultural setting (Vygotsky, 1978). In this study, play-based teaching methods support these ideas by encouraging children to learn through social play, communication, and interaction with their peers and teachers.

According to Vygotsky, learning takes place first between people (social level) and then inside the child (individual level). He stressed that children grow intellectually through guided interaction, especially with someone more knowledgeable, such as a teacher or peer (Vygotsky, 1978). In the context of this research, play-based pedagogy allows teachers to guide children in learning through play activities such as role-playing, storytelling, singing, and building games. These activities promote active learning and help children develop thinking, language, and social skills.

One important idea from Vygotsky's theory is the Zone of Proximal Development (ZPD), which means the difference between what a child can do alone and what they can do with help (Vygotsky, 1978). Play-based learning fits well within this zone because children often need guidance during play to understand new ideas or solve problems. For example, when a teacher supports a child during a counting game, the child learns better than if left alone. This study explores whether teachers in Sagnerigu value such guidance opportunities during play and whether they view play as a way to help children move through their ZPD.

The theory also highlights the role of cultural tools and language in shaping how children learn. In Sagnerigu, play-based methods may include traditional songs,

storytelling, local games, and familiar objects. These tools are part of the children's culture and support their understanding of the world. Vygotsky believed that culture strongly influences learning, and play in early childhood education should reflect the child's cultural environment (Vygotsky, 1986). This study will look at how teachers' attitudes are influenced by the local culture and whether they use culturally relevant play activities.

In addition, Vygotsky viewed the teacher as a facilitator who provides support or "scaffolding" to help children learn until they can do it by themselves. Play-based teaching follows this principle by allowing teachers to guide and observe children during play, offering help when needed. The attitudes of teachers toward such a role are important in understanding how well play is used in kindergarten classrooms.

In summary, Vygotsky's Socio-Cultural Theory provides a strong foundation for this study. It supports the use of play as a social and cultural tool for learning and development in early childhood. This research will use Vygotsky's ideas to examine how kindergarten teachers in Sagnerigu view play-based methods and whether they see them as valuable tools for supporting children's learning and growth.

## **2.2 Concept of play based learning**

Play-based learning is a pedagogical approach that leverages play as a primary means of fostering learning and development in young children. This method recognizes play as an essential component of the educational process, offering children the opportunity to explore, experiment, and engage with their environment in ways that are both enjoyable and educational (Ginsburg, 2007). The National Association for the Education of Young Children (NAEYC, 2009) emphasizes that play-based learning is instrumental in nurturing a range of skills, including cognitive, social, emotional, and

physical abilities, through a combination of child-directed activities and structured play experiences.

Central to the concept of play-based learning is the understanding that play is not merely a recreational activity but a fundamental way through which children make sense of the world around them (Ginsburg, 2017). During play, children engage in activities that require problem-solving, creativity, and critical thinking. For example, when children build structures with blocks or engage in pretend play, they are practicing spatial reasoning, experimenting with cause and effect, and developing their narrative skills (Berk & Winsler, 2015). These activities are aligned with Vygotsky's (1978) theory, which posits that play is a crucial aspect of cognitive development, allowing children to operate within their Zone of Proximal Development (ZPD). This is the range between what a child can do independently and what they can achieve with guidance from more knowledgeable others.

Play-based learning environments are intentionally designed to be rich and stimulating, providing diverse materials and opportunities for exploration. Educators play a vital role in facilitating these environments, observing children's interactions, and guiding their learning experiences (Miller & Almon, 2019). By providing a variety of play materials and scenarios, teachers can support children's engagement and learning across multiple domains. For instance, through role-playing activities, children can develop social skills such as cooperation and empathy, while also practicing language and literacy skills as they engage in storytelling and dialogue (Johnson et al., 2015).

Research supports the benefits of play-based learning across various aspects of development. Cognitive development is significantly enhanced through play, as children engage in activities that promote critical thinking and problem-solving

(Weikart et al., 2011). Social skills are also positively impacted, as play-based learning provides children with opportunities to interact with peers, negotiate, and resolve conflicts (Whitebread et al., 2012). Emotional development is further supported through play, as children can explore and express their feelings in a safe and controlled environment, fostering emotional resilience and regulation (Ginsburg, 2077).

Moreover, play-based learning is associated with improved academic outcomes. Studies have shown that children who engage in play-based learning exhibit better literacy and numeracy skills compared to those in more traditional, instruction-focused settings (Miller & Almon, 2009). This is because play-based learning integrates academic concepts into engaging and meaningful contexts, making learning more relevant and enjoyable for children.

However, effective implementation of play-based learning requires careful planning and an understanding of each child's unique needs. Educators must balance child-initiated play with structured activities that meet curriculum goals while respecting children's autonomy (Berk & Winsler, 1995). Ensuring that play-based activities are developmentally appropriate and aligned with educational objectives is crucial for maximizing the benefits of this approach.

One of the fundamental principles of play-based learning is its alignment with children's intrinsic tendencies to learn through play. Research consistently supports that play is a natural and effective medium through which children explore their surroundings and acquire new skills (Whitebread et al., 2012). This approach leverages the inherent joy and curiosity that drive children's engagement with their environment, transforming everyday activities into opportunities for learning and growth.

Play creates an invaluable context for developing essential skills such as problem-solving, creativity, and critical thinking. For instance, when children engage in imaginative play, such as pretending to be characters in a story or role-playing various scenarios, they practice and refine their ability to think creatively and solve problems in novel ways (Ginsburg, 2007). These activities often involve constructing and manipulating objects, negotiating roles with peers, and improvising solutions to emerging challenges, all of which contribute to cognitive development and the enhancement of higher-order thinking skills.

Vygotsky's (1978) theory underscores the importance of play in cognitive development by introducing the concept of the Zone of Proximal Development (ZPD). According to Vygotsky, the ZPD represents the range between what a child can accomplish independently and what they can achieve with support from others. Play acts as a critical tool within this framework by allowing children to tackle tasks and challenges that are slightly beyond their current abilities but within reach with appropriate guidance and support. This process not only fosters cognitive development but also helps children develop the confidence and competence to tackle more complex tasks as they grow.

In play-based learning environments, educators facilitate this process by creating opportunities for children to engage in activities that challenge their thinking and encourage them to extend their capabilities. For example, teachers might set up scenarios that require children to solve problems collaboratively, such as building a structure with blocks that must support a certain weight, or engaging in a group activity that involves planning and executing a project (Berk & Winsler, 1995). By providing scaffolding such as offering hints, asking guiding questions, or modeling problem-

solving strategies educators help children navigate their ZPD and develop their cognitive abilities more effectively.

Moreover, play-based learning aligns with contemporary understandings of how children learn best, reflecting a broad recognition of its benefits across various domains of development. Whitebread et al. (2012) emphasize that play extends beyond supporting cognitive development to also significantly enhance social and emotional learning. Engaging in play allows children to develop crucial interpersonal skills and emotional competencies that are Play-based learning is widely recognized in contemporary early childhood education as fundamental for children's overall growth and long-term success because it supports social, emotional, cognitive, and academic development in an integrated manner. Through play, children gain valuable experiences in interacting with their peers, which strengthens their ability to communicate effectively, collaborate with others, and build meaningful relationships. When children participate in cooperative play activities such as building structures together, organizing pretend scenarios, or engaging in group games, they naturally practise essential social skills including sharing, turn-taking, listening, negotiation, and conflict resolution (Pyle, DeLuca, & Danniels, 2017; UNICEF, 2018; Zosh et al., 2018). These regular interactions within play contexts help children learn how to understand different viewpoints, manage disagreements peacefully, and function effectively within a group, all of which contribute to the development of strong social competence.

In addition to supporting social skills, play-based learning plays a significant role in children's emotional development by providing a safe and flexible space where they can explore and express their feelings freely. During play, children experiment with various emotional responses as they take on different roles and imagine different

scenarios. This process enables them to develop emotional regulation, resilience, and self-control because they learn how to manage emotions such as excitement, frustration, happiness, and disappointment within a supportive environment (Zosh et al., 2018; Yogman et al., 2018; NAEYC, 2020). For example, when children engage in role-playing games, they may act out situations that require them to show empathy, patience, or problem-solving, which strengthens their emotional understanding and maturity.

The holistic benefits of play-based learning have been emphasized in recent educational research, which shows that play contributes not only to children's social and emotional development but also to their cognitive growth and academic success. Children who learn through play are more likely to develop a positive attitude towards learning because play makes learning enjoyable, meaningful, and engaging (UNICEF, 2018; Zosh et al., 2018; OECD, 2021). When children are actively involved in playful learning experiences, they show higher levels of enthusiasm, curiosity, and motivation, which positively influence their learning outcomes across different educational domains.

Play-based learning is also closely aligned with modern child-centered educational philosophies that emphasize the importance of meeting the individual needs, interests, and abilities of each child rather than strictly following a rigid curriculum. This approach recognizes that children learn best when they are given the freedom to explore, discover, and follow their natural curiosity (NAEYC, 2020; Pyle et al., 2017; OECD, 2021). Through play, children can choose activities that interest them, which increases their engagement and involvement in the learning process. This child-centered nature of play-based learning makes education more meaningful and relevant to children's lives.

A successful play-based learning environment requires educators to create settings that are rich in learning materials and opportunities for exploration. Teachers intentionally design classrooms with various resources that stimulate children's curiosity and encourage active engagement with their surroundings (NAEYC, 2020; UNICEF, 2018). These environments often include blocks, puzzles, storybooks, role-play materials, art supplies, and outdoor play equipment that cater to different developmental levels and interests. By providing such a variety of materials, teachers create dynamic spaces where children can investigate, experiment, and learn through hands-on experiences.

An important feature of a play-based learning environment is ensuring that it is physically and emotionally safe for children. When children feel secure and supported, they are more willing to take risks, try new ideas, and explore unfamiliar concepts without fear of failure (Yogman et al., 2018; Zosh et al., 2018). This sense of safety promotes confidence, independence, and resilience because children learn to view mistakes as part of the learning process rather than something to be avoided.

The role of the teacher in a play-based learning environment is very important and involves more than simply allowing children to play. Teachers act as facilitators, observers, and active participants in children's learning. By carefully observing children during play, teachers gain valuable insights into their interests, strengths, developmental levels, and emerging skills, which helps them to provide appropriate support and guidance (Pyle et al., 2017; NAEYC, 2020). This observation allows teachers to adjust their teaching strategies to meet the individual needs of each child effectively.

One of the key responsibilities of teachers in play-based settings is providing scaffolding. Scaffolding involves giving children the support they need to accomplish

tasks that they cannot do alone but can achieve with assistance. During play, teachers may offer suggestions, ask guiding questions, or model certain behaviors to help children overcome challenges and develop new skills (Zosh et al., 2018; Pyle et al., 2017). As children become more confident and capable, the teacher gradually reduces the level of support, which promotes independence and problem-solving abilities.

Teachers also use play as an opportunity to introduce new concepts, vocabulary, and academic content in a natural and meaningful way. For example, during role-play, a teacher may introduce new words related to the play scenario, or during sorting games, the teacher may introduce mathematical concepts such as counting, grouping, and comparing (UNICEF, 2018; NAEYC, 2020). This integration of learning into play helps children make connections between their play experiences and academic knowledge, which improves understanding and retention.

Another important role of the teacher is to maintain a balance between child-initiated play and structured learning activities that align with curriculum goals. While children are given the freedom to explore through play, teachers ensure that the activities also support important developmental milestones and learning outcomes (OECD, 2021; Pyle et al., 2017). This balance ensures that play remains central to the learning process while still achieving educational objectives.

Research evidence shows that children who engage in play-based learning demonstrate improved social skills such as cooperation, empathy, and teamwork. During group play activities, children learn how to negotiate roles, share materials, and work together to achieve common goals, which strengthens their ability to interact positively with others (Zosh et al., 2018; UNICEF, 2018). These experiences are particularly important in early childhood because they form the foundation for future social relationships.

Play-based learning is also strongly linked to improvements in literacy and numeracy skills. Through storytelling, singing, alphabet games, counting activities, and sorting tasks, children develop foundational academic skills in ways that are enjoyable and meaningful (OECD, 2021; NAEYC, 2020). These playful activities make learning less stressful and more engaging, which enhances children's motivation to learn.

Cognitive development is another major benefit of play-based learning. When children build with blocks, solve puzzles, or engage in imaginative play, they develop problem-solving skills, creativity, logical thinking, and spatial awareness (Zosh et al., 2018; Yogman et al., 2018). These hands-on experiences help children understand concepts in a concrete and practical way, which is often more effective than traditional teaching methods.

Furthermore, play-based learning supports children's emotional resilience by allowing them to experience and manage different emotions within a supportive setting. During play, children encounter situations that challenge their patience, tolerance, and emotional control. With guidance from teachers, they learn how to cope with frustration, disappointment, and excitement, which strengthens their emotional maturity (Yogman et al., 2018; NAEYC, 2020).

In role-play situations, children learn to understand and empathize with the feelings of others by pretending to be different characters and acting out various social scenarios. This helps them develop empathy, compassion, and emotional awareness, which are essential for healthy social interactions. Play therefore serves as a powerful tool for emotional growth and development.

The benefits of emotional growth through play are closely linked to overall well-being and academic success. Research indicates that children who have strong emotional regulation skills are better able to focus, engage with learning materials, and interact positively with peers and teachers (Ginsburg, 2007). By providing opportunities for emotional expression and regulation through play, educators support the development of these skills, which in turn enhances children's ability to succeed in academic settings and develop healthy interpersonal relationships.

Implementing play-based learning effectively necessitates careful planning and a deep understanding of each child's individual needs (NAEYC, 2009). Educators must be adept at designing play opportunities that are not only developmentally appropriate but also aligned with broader curriculum goals. This requires a thoughtful approach to integrating play with educational objectives, ensuring that children's exploration and creativity contribute meaningfully to their learning.

One of the core challenges in implementing play-based learning is creating play opportunities that cater to diverse developmental stages and interests. Educators need to be knowledgeable about the developmental milestones and needs of their students to design activities that are both engaging and educationally beneficial. For example, a teacher might set up a dramatic play area that reflects real-world scenarios relevant to the children's experiences, such as a pretend grocery store or a role-play medical clinic. These setups should be designed to encourage exploration and learning while being suitable for the children's developmental levels and interests (NAEYC, 2009).

In addition to being developmentally appropriate, play-based activities must align with curriculum goals to ensure that educational standards are met. Educators need to balance the spontaneous, child-initiated aspects of play with structured guidance to

address specific learning objectives. This balance involves designing play activities that naturally integrate educational content while providing enough flexibility to allow for child-led exploration and discovery (Berk & Winsler, 1995). For instance, incorporating numeracy concepts into a cooking play scenario can simultaneously support children's understanding of measurements and their engagement in a meaningful activity.

Furthermore, educators must skillfully navigate the balance between child-initiated play and guided instruction. Child-initiated play allows children to pursue their interests and ideas, fostering autonomy and intrinsic motivation. However, guided instruction is also necessary to introduce new concepts, extend learning, and ensure that educational objectives are achieved. Effective teachers use strategies such as scaffolding, where they provide support just beyond the child's current level of understanding, to help bridge the gap between child-initiated activities and learning goals (Berk & Winsler, 1995).

This approach involves actively observing children's play, identifying opportunities for introducing new concepts, and intervening at appropriate moments to extend their learning. For example, if a child is building a structure with blocks and demonstrating an understanding of basic geometric shapes, the teacher might introduce vocabulary related to shapes and spatial relationships to deepen the child's understanding (NAEYC, 2009). This balance ensures that play remains a central component of the learning experience while still achieving educational outcomes.

### **2.3 The Concept of Numeracy**

Numeracy is a foundational component of early childhood education because it equips children with the ability to understand, interpret, and use numbers meaningfully in everyday life. Numeracy goes beyond the simple ability to count; it involves recognizing quantities, comparing objects, identifying patterns, solving problems, and applying mathematical thinking in daily situations. Contemporary research shows that early numeracy development strengthens children's logical thinking and prepares them for future academic learning, particularly in mathematics and science (Clements & Sarama, 2014; OECD, 2021; UNICEF, 2019).

Numeracy in early childhood includes a wide range of basic mathematical skills that support children's growth and learning. These skills involve number recognition, counting, understanding shapes and sizes, measuring, identifying patterns, and understanding time and money in simple ways. Children who develop these skills early are better prepared to handle more complex mathematical concepts later in school. Research indicates that numeracy should be viewed as the ability to understand numbers and use them to solve problems in real-life contexts, similar to how literacy involves understanding and using language (Ginsburg, Lee, & Boyd, 2008; National Research Council, 2009; OECD, 2021).

Young children learn numeracy most effectively through play, exploration, and hands-on activities. When children count toys, sort objects by color or size, build structures with blocks, or participate in number games, they are actively engaging in numeracy learning. Play provides a natural and stress-free way for children to explore mathematical ideas without pressure. Studies show that playful learning experiences involving numbers, shapes, and patterns help children develop deeper mathematical

understanding because they are actively involved in the learning process (Zosh et al., 2018; NAEYC, 2020; Pyle et al., 2017).

Numeracy also supports the development of problem-solving and critical thinking skills. For instance, when children try to determine how many blocks are needed to complete a structure or how to share items equally among friends, they are applying mathematical reasoning. Encouraging children to explore numbers during everyday activities builds their confidence and ability to think mathematically. Research confirms that children learn mathematics more effectively when they are allowed to explore, question, and experiment with numbers in meaningful contexts (Clements & Sarama, 2014; NRC, 2009).

Understanding quantity and the use of numbers in daily life is another essential part of early numeracy. Children apply numeracy when they count spoons needed at the table, recognize house numbers, or measure ingredients during cooking activities. When numeracy is connected to real-life experiences, children develop greater interest and confidence in using numbers. This practical use of mathematics makes learning relevant and meaningful to children's lives (UNICEF, 2019; OECD, 2021).

Teachers and caregivers play a critical role in promoting numeracy development. They do this by creating rich learning environments filled with materials such as number charts, counting blocks, puzzles, measuring tools, and number games. Educators are encouraged to engage children in conversations about numbers, ask questions, and guide them in solving simple mathematical problems. Using everyday mathematical language such as “more,” “less,” “equal,” “big,” and “small” during interactions helps children understand numeracy concepts naturally (NAEYC, 2020; Clements & Sarama, 2014).

It is also important to recognize that children learn numeracy at different rates. Some children quickly grasp counting and number recognition, while others require more time and support. Effective teachers observe children's existing knowledge and design activities that match their learning levels. Play-based and learner-centered approaches are therefore highly effective in supporting early numeracy because they allow children to learn at their own pace (Pyle et al., 2017; OECD, 2021).

In many educational systems, including Ghana, early childhood programs emphasize numeracy because it predicts later academic success. Evidence shows that children who begin school with strong numeracy skills tend to perform better in mathematics and related subjects in later years. Early exposure to numeracy concepts provides a strong foundation for lifelong learning (UNICEF, 2019; OECD, 2021).

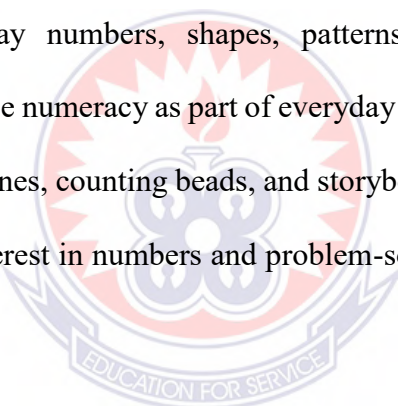
Numeracy development is also closely linked to language development. When children explain their thinking about numbers, describe patterns, or talk through problem-solving steps, they use language to express mathematical ideas. Research indicates that children who can verbalize their mathematical thinking often demonstrate deeper understanding. Teachers are therefore encouraged to ask open-ended questions such as “How did you get this answer?” or “Can you show another way?” to promote both numeracy and language skills (Clements & Sarama, 2014; NAEYC, 2020).

Cultural practices within the home also influence how children develop numeracy skills. In many homes, parents involve children in activities such as shopping, cooking, and sharing items, which naturally expose them to numbers and counting. When families and schools work together to support numeracy learning, children's understanding becomes stronger and more meaningful. Connecting classroom learning

to children's home experiences enhances numeracy development (UNICEF, 2018; OECD, 2021).

Technology can also be used to support early numeracy when applied appropriately. Educational applications, videos, and digital games that involve counting and number recognition can make learning engaging for young children. However, experts caution that digital tools should complement, not replace, hands-on play experiences. Real-life interaction with objects remains essential for deep mathematical understanding (Zosh et al., 2018; NAEYC, 2020).

The classroom environment also plays an important role in numeracy development. Classrooms that display numbers, shapes, patterns, and math-related materials encourage children to see numeracy as part of everyday life. Resources such as puzzles, shape sorters, number lines, counting beads, and storybooks with mathematical themes stimulate children's interest in numbers and problem-solving (NAEYC, 2020; OECD, 2021).



#### **2.4 Teaching techniques used to facilitate learning outcomes**

Effective teaching techniques are essential for facilitating optimal learning outcomes. These methods vary widely but share common goals: enhancing student understanding, engagement, and retention of information. One such technique is active learning, which involves engaging students directly in the learning process. According to Freeman et al. (2014), active learning strategies, such as group discussions, problem-solving tasks, and peer teaching, significantly increase student performance in science, technology, engineering, and mathematics (STEM) subjects. This approach encourages students to think critically and collaborate, leading to a deeper understanding of the material.

Another powerful technique is differentiated instruction, which tailors teaching methods to meet the diverse needs of students. Differentiated instruction is a pedagogical approach that involves proactively planning and implementing varied approaches to content, process, and product to cater to students' differences in readiness, interest, and learning profile. According to Tomlinson (2014), differentiated instruction ensures that all students, regardless of their abilities, can access the curriculum and achieve learning objectives. This approach is grounded in the belief that students learn in diverse ways and that effective teaching must adapt to these variations to maximize each student's potential.

Tomlinson (2014) emphasizes that differentiated instruction involves modifying four key elements of teaching: content, process, product, and learning environment. Content refers to the information and skills that students are expected to learn. In a differentiated classroom, teachers may present the same core content but adjust the complexity to match students' varying levels of prior knowledge and understanding. This might involve using different texts on the same topic, providing additional resources for students who need them, or using multimedia tools to enhance understanding.

The process refers to how students make sense of the content. Differentiating the process involves using various instructional strategies to help students understand and internalize the material. For example, some students might benefit from working in small groups to discuss and solve problems, while others might prefer independent study or one-on-one instruction. Teachers might use tiered activities, where tasks are designed at different levels of difficulty, or they might incorporate learning centers that offer a variety of activities to accommodate different learning styles.

Product differentiation involves allowing students to demonstrate their learning in various ways. Instead of a one-size-fits-all assessment, differentiated instruction encourages the use of multiple forms of assessment that align with students' strengths and preferences. For instance, some students might show their understanding through written reports, while others might create presentations, perform skits, or build models. By providing choices in how they demonstrate learning, teachers can better assess students' true understanding and skills.

The learning environment is another crucial aspect of differentiated instruction. This involves creating a classroom atmosphere that is flexible and supportive, catering to the emotional and social needs of students. A differentiated classroom might have various seating arrangements, areas for quiet work, and spaces for collaboration. It is also characterized by a climate of mutual respect and encouragement, where differences are valued and students feel safe to take risks and express their ideas.

Studies have shown that differentiated instruction not only supports struggling learners but also challenges advanced students, promoting overall academic growth. Subban (2006) notes that differentiated instruction addresses the needs of all learners by providing multiple paths to learning, ensuring that each student can progress at their own pace and according to their own abilities. This approach helps to close achievement gaps by providing additional support to those who need it while extending the learning for those who are ready for more complex tasks.

Differentiated instruction is particularly effective in mixed-ability classrooms where students' needs and abilities vary widely. It acknowledges that students bring different experiences, interests, and strengths to the classroom and that these differences should be celebrated and utilized as resources for learning. By tailoring instruction to meet

these diverse needs, teachers can create more engaging and meaningful learning experiences for all students.

Furthermore, differentiated instruction fosters a more inclusive classroom environment. It aligns with the principles of universal design for learning (UDL), which advocate for designing educational experiences that are accessible and challenging for all students, regardless of their abilities or backgrounds. By using a variety of instructional strategies and providing multiple means of engagement, representation, and expression, differentiated instruction helps to ensure that all students have the opportunity to succeed.

Formative assessment is another critical technique that helps facilitate learning outcomes. This involves ongoing assessments that provide immediate feedback to both students and teachers about learning progress. Unlike summative assessments, which evaluate student learning at the end of an instructional period, formative assessments are integrated into the learning process and are used to guide and improve ongoing instruction. Black and Wiliam (2009) argue that formative assessments, such as quizzes, peer reviews, and observational assessments, enable teachers to identify learning gaps and adjust instruction accordingly.

Quizzes are a commonly used form of formative assessment that allows teachers to quickly gauge students' understanding of the material. These can be administered at the beginning, middle, or end of a lesson to assess prior knowledge, monitor progress, and check for understanding. The immediate feedback from quizzes helps students recognize what they have mastered and what areas need more attention. Teachers can use the results to tailor their instruction to address any misconceptions or difficulties students may have.

Peer reviews involve students assessing each other's work, which can be a powerful tool for learning. This process not only helps students learn to evaluate quality work but also exposes them to different perspectives and ideas. Peer reviews encourage collaborative learning and critical thinking as students provide constructive feedback to their classmates. This method also allows students to reflect on their own work and consider how they can improve based on the feedback received.

Observational assessments are another effective formative assessment technique. These involve teachers observing students as they engage in learning activities. By watching how students approach tasks, teachers can gather valuable information about their understanding, skills, and attitudes. Observational assessments can be particularly useful for assessing skills that are difficult to measure through traditional tests, such as teamwork, problem-solving, and creativity. Teachers can use these observations to provide targeted support and guidance to individual students.

This continuous feedback loop is essential for fostering a growth mindset among students. According to Dweck (2006), a growth mindset is the belief that abilities can be developed through dedication and hard work. Formative assessments contribute to this by emphasizing progress and improvement rather than just final outcomes. When students receive regular feedback, they become more aware of their learning processes and are encouraged to take an active role in their education. They learn to view challenges as opportunities for growth and understand that effort and persistence are key to success.

Formative assessments also enhance learning outcomes by promoting self-regulation among students. Self-regulation involves setting goals, monitoring progress, and adjusting strategies as needed. By engaging in formative assessments, students learn to

set realistic goals for their learning, track their progress, and make adjustments based on the feedback they receive. This process helps students develop the skills needed to become independent and self-directed learners.

Moreover, formative assessments support differentiated instruction by providing teachers with the information needed to tailor their teaching strategies to meet the diverse needs of their students. When teachers have a clear understanding of each student's strengths and areas for improvement, they can adjust their instruction to provide the appropriate level of challenge and support. This ensures that all students, regardless of their abilities, can achieve their learning goals.

Another benefit of formative assessments is that they create a more inclusive classroom environment. By using a variety of assessment methods, teachers can accommodate different learning styles and preferences. This ensures that all students have the opportunity to demonstrate their understanding and progress in ways that are most meaningful to them. Formative assessments also help to identify and address learning gaps early on, preventing students from falling behind and ensuring that they receive the support they need to succeed.

Collaborative learning is also widely recognized for its effectiveness in promoting a range of positive educational outcomes. This approach involves students working together in small groups to achieve common goals, which enhances their problem-solving and critical-thinking skills. By engaging in collaborative learning activities, students can share diverse perspectives, clarify their thoughts, challenge each other's ideas, and develop a deeper understanding of the subject matter.

Contemporary educational practice increasingly emphasizes learner-centered teaching approaches that actively engage students in the learning process. Among the most effective of these approaches are collaborative learning, scaffolding, inquiry-based learning, technology integration, and culturally responsive teaching. These approaches shift the classroom from teacher-dominated instruction to interactive, participatory, and meaningful learning experiences that promote critical thinking, social interaction, and deeper understanding of content. Research consistently shows that when students are actively involved in constructing knowledge through interaction, exploration, and collaboration, learning outcomes improve significantly (Johnson & Johnson, 2009; Schmid et al., 2014; Gay, 2018; Kuhlthau et al., 2015).

Collaborative learning is a powerful strategy that promotes higher achievement compared to individual learning. When students work together in groups, they share ideas, support one another, and address knowledge gaps collectively. This shared responsibility leads to deeper understanding and improved retention of information. Studies indicate that students engaged in collaborative learning perform better on assessments, demonstrate improved problem-solving skills, and show greater engagement in lessons (Johnson & Johnson, 2009; Gillies, 2016). Through collaboration, learners are exposed to diverse perspectives, which enriches their understanding and encourages innovative thinking.

Beyond academic achievement, collaborative learning contributes to the development of interpersonal and social skills. Working in groups requires effective communication, listening, negotiation, and conflict resolution. These skills are essential not only for academic success but also for real-life interactions and future careers. As students

interact with peers, they develop empathy, respect for diverse opinions, and a sense of belonging, creating a supportive classroom environment (Gillies, 2016; OECD, 2021).

Collaborative learning also enhances students' self-esteem and motivation. When students contribute meaningfully to group tasks, they feel valued and recognized. This recognition builds confidence and encourages active participation in future learning activities. Students begin to see themselves as capable learners who can contribute positively to collective goals, fostering a growth mindset and lifelong interest in learning (Johnson & Johnson, 2009).

Scaffolding is another essential learner-centered approach that supports students as they acquire new knowledge and skills. Originally conceptualized by Wood, Bruner, and Ross (1976) and expanded in contemporary practice, scaffolding involves providing temporary support that enables learners to accomplish tasks they cannot complete independently. This support is gradually withdrawn as learners gain competence and confidence. Scaffolding has been shown to be particularly effective in helping students master complex tasks and develop independence (Van de Pol et al., 2015).

Inquiry-based learning further strengthens learner engagement by encouraging students to explore questions, investigate problems, and develop solutions through research and experimentation. In this approach, students are active participants in their learning rather than passive recipients of information. Inquiry-based learning develops research skills, critical thinking, curiosity, and problem-solving abilities. Students learn how to ask meaningful questions, collect and analyze data, and draw evidence-based conclusions (Kuhlthau, Maniotes, & Caspari, 2015; Pedaste et al., 2015).

Inquiry-based learning also fosters intrinsic motivation. When students investigate topics that interest them, they become more engaged and persistent, even when faced with challenges. This persistence contributes to the development of self-regulation and ownership of learning. Students learn to set goals, manage time, and reflect on their progress, becoming autonomous learners (Pedaste et al., 2015).

Technology integration complements these approaches by providing tools that enhance communication, collaboration, and access to information. Digital platforms such as collaborative documents, discussion forums, educational apps, and virtual classrooms make learning more interactive and flexible. Technology supports differentiated instruction and accommodates various learning styles, making education more inclusive (Schmid et al., 2014; OECD, 2021). However, effective integration requires purposeful use aligned with pedagogical goals.

Culturally responsive teaching is equally important in ensuring that learning is meaningful and inclusive for all students. This approach recognizes and incorporates students' cultural backgrounds into teaching practices. When students see their cultures reflected in the curriculum, they feel valued and are more likely to engage actively in learning. Culturally responsive teaching promotes respect for diversity, reduces bias, and fosters mutual understanding among learners (Gay, 2018; Hammond, 2015).

By integrating culturally relevant examples, teaching methods, and materials, teachers make learning more relatable and engaging. Students are more motivated when content connects with their lived experiences. This relevance enhances comprehension and retention while promoting academic achievement (Gay, 2018).

These approaches are not isolated; they work best when integrated. For example, inquiry-based learning often involves collaboration, scaffolding, and technology use, all within culturally responsive contexts. Teachers play a crucial role as facilitators, guiding students, providing support, and creating safe environments where learners feel comfortable exploring ideas and making mistakes.

## **2.5 Incorporating play-based activities into daily lesson plans and curriculum**

Play-based activities are integral to cognitive growth, as they provide children with opportunities to engage in problem-solving, experimentation, and exploration, which are crucial for their cognitive development. Through play, children actively participate in experiences that foster their cognitive abilities and enhance their understanding of the world around them.

Vygotsky (1978) highlights the significant role of play in developing higher mental functions. According to Vygotsky's theory, play is a critical component of cognitive development as it allows children to operate within their zone of proximal development. This zone represents the range of tasks that children can perform with guidance and support, but cannot yet achieve independently. Play provides a context in which children can explore and practice new skills, facilitating their cognitive growth as they tackle challenges that are just beyond their current abilities. By engaging in play, children often encounter problems that require them to think critically and creatively, thereby enhancing their cognitive abilities.

For instance, building with blocks is a common play-based activity that promotes cognitive development. When children engage in block play, they are not merely constructing structures but are also learning important concepts related to spatial awareness, geometry, and cause and effect relationships. As children experiment with

different configurations and observe the outcomes of their constructions, they develop a deeper understanding of how objects interact in space. This hands-on experience supports the development of problem-solving skills and logical thinking, as children must consider how to balance and connect blocks to create stable structures.

Another example of play-based learning is role-playing scenarios. Role play allows children to take on different roles and act out various situations, which encourages them to use their imagination and creativity. Through role play, children explore social roles, practice communication skills, and understand social norms and relationships. This type of play helps children develop executive functions such as planning, decision-making, and self-regulation. By navigating different social scenarios and resolving conflicts within the context of their play, children build their social cognition and empathy.

Play-based learning is widely recognized in contemporary early childhood research as a powerful approach for promoting children's cognitive, social, emotional, physical, and language development in an integrated and meaningful manner. Recent literature continues to affirm that when children engage in structured and unstructured play, they develop essential skills that contribute to academic success and overall well-being. Scholars emphasize that play provides a natural context for exploration, experimentation, and interaction, allowing children to construct knowledge actively rather than passively receiving information (Yogman et al., 2018; Zosh et al., 2017; Hirsh-Pasek et al., 2020).

Play-based activities significantly promote cognitive development by stimulating curiosity, imagination, problem-solving, and critical thinking. During play, children encounter situations that require them to make decisions, test ideas, and solve problems creatively. For instance, when building structures with blocks or engaging in pretend

scenarios, children experiment with balance, design, roles, and sequences, all of which enhance higher-order thinking skills. Research indicates that playful learning environments support children's executive functioning, memory, and flexible thinking, which are foundational for later academic achievement (Zosh et al., 2017; Weisberg et al., 2016). Through play, children also develop language skills as they articulate ideas, negotiate roles, and communicate intentions with peers.

Creativity and innovation are also strongly nurtured through play-based learning. Imaginative play allows children to invent new scenarios, explore alternative possibilities, and generate original solutions to problems. This form of creativity is essential not only for cognitive growth but also for future success in diverse fields that require innovative thinking. Studies show that children who frequently engage in imaginative play demonstrate stronger divergent thinking skills and greater adaptability when faced with new challenges (Hirsh-Pasek et al., 2020).

Play-based learning contributes immensely to social and emotional development. Peer interactions during play provide opportunities for children to cooperate, share, negotiate, and resolve conflicts. These interactions help children develop empathy, emotional intelligence, and social competence. Contemporary research explains that social play creates a natural environment where children practice understanding social rules such as turn-taking, fairness, and respect for others' opinions (Whitebread et al., 2017; Yogman et al., 2018). Through these experiences, children learn to manage their emotions, cope with frustration, and develop resilience.

Sharing during play fosters empathy as children learn to consider the feelings and needs of their peers. Negotiation helps children express their views while accommodating others, promoting cooperation and mutual understanding. Conflict resolution during

play teaches children patience and emotional regulation, as they learn constructive ways to handle disagreements. These social competencies are essential for classroom harmony and lifelong interpersonal relationships (Denham et al., 2015).

Group games and cooperative projects further promote a sense of belonging and community among children. Working together to achieve common goals builds teamwork, trust, and inclusiveness. Children who feel socially connected to peers are more confident and more willing to participate in classroom activities. This sense of belonging contributes positively to their emotional well-being and academic engagement (Wentzel & Ramani, 2016).

Play-based learning also supports the development of a positive self-concept. When children successfully navigate social situations and accomplish tasks during play, they gain confidence in their abilities. This confidence encourages active participation in future learning experiences and fosters a positive attitude toward school. Research shows that play provides children with opportunities to experience success, which strengthens their self-esteem and motivation to learn (Barker et al., 2014).

Physical play is another important component of play-based pedagogy that supports motor development and overall health. Activities such as running, jumping, climbing, and balancing enhance children's gross motor skills, coordination, and strength. Fine motor skills are also developed through activities such as manipulating small objects, drawing, or building with blocks. Studies highlight that regular physical play improves children's physical fitness, balance, and body awareness while also supporting brain development (Pellegrini, 2016; Tremblay et al., 2015).

Physical play contributes to healthy lifestyle habits by encouraging children to be active from an early age. Research indicates that active play reduces the risk of childhood obesity and promotes cardiovascular and respiratory health. Furthermore, physical play supports cognitive development, as children must plan movements, assess risks, and solve movement-related challenges (Tremblay et al., 2015).

Play-based activities also strongly enhance language and literacy development. Dramatic play, storytelling, and puppet shows provide rich opportunities for children to practice communication skills, expand vocabulary, and develop narrative abilities. During role play, children use language to describe actions, negotiate roles, and express ideas. This active use of language strengthens oral communication and prepares children for reading and writing (Roskos & Christie, 2011; Nicolopoulou, 2018).

Storytelling during play helps children understand story structure, sequencing, and comprehension. Puppet shows and dramatic enactments encourage expressive language and listening skills. Children develop confidence in speaking and learn to organize their thoughts coherently. These playful literacy experiences foster positive attitudes toward reading and writing (Nicolopoulou, 2018).

Integrating play into thematic units is an effective strategy for blending play with academic content. For example, a theme such as “community helpers” allows children to engage in role play as doctors, teachers, or firefighters while learning relevant vocabulary, social roles, and responsibilities. Thematic play promotes holistic learning by connecting different subject areas in meaningful ways (Edwards, 2017).

Teachers play a critical role in facilitating effective play-based learning. They create stimulating environments, provide appropriate materials, observe children’s interests,

and offer guidance when necessary. Rather than directing play, teachers scaffold learning by asking questions, introducing new vocabulary, and extending children's ideas. This supportive role ensures that play remains purposeful and aligned with learning goals (Howard et al., 2018).

A safe physical and emotional environment is essential for successful play-based learning. Children must feel secure to explore, take risks, and express themselves freely. When children feel emotionally safe, they are more likely to engage deeply in play activities and experiment with new ideas (Whitebread et al., 2017).

In summary, contemporary research strongly supports play-based learning as a comprehensive approach that enhances cognitive, social, emotional, physical, and language development. Through play, children develop critical thinking, creativity, empathy, resilience, motor skills, and communication abilities. Teachers' roles in designing supportive environments and integrating play with curriculum goals are vital for maximizing these benefits. Play-based pedagogy therefore remains a foundational strategy in early childhood education for promoting holistic child development.

Incorporating math activities into the thematic unit can further support children's academic development. For example, educators can include tasks such as counting and sorting objects related to each community helper role. Children might count the number of tools a firefighter uses, sort items in a doctor's medical kit, or measure ingredients for a chef's recipe. These activities provide practical applications of mathematical concepts and help children understand the relevance of math in everyday life. Bredekamp (2014) highlights that integrating math into play-based activities makes learning more meaningful and helps children develop a strong foundation in mathematical skills.

Literacy activities are another important aspect of thematic units. In a "community helpers" unit, educators can include reading and writing activities that relate to the theme. For example, children can read books about community helpers to learn more about each role, and then create their own stories or reports about their favorite helpers. This approach not only enhances reading comprehension and writing skills but also helps children connect their literacy learning to real-world contexts. Bredekamp (2014) emphasizes that integrating literacy into play-based learning fosters a love for reading and writing while reinforcing essential literacy skills.

To effectively implement thematic units, educators should design lesson plans that include a variety of play-based activities aligned with the central theme. These activities should be carefully planned to ensure they support specific learning objectives while providing opportunities for children to explore, experiment, and engage with the content. For example, a lesson plan for the "community helpers" unit might include a role-playing activity in which children act out different professions, followed by a math activity where they count and sort related objects, and conclude with a literacy activity where they read and write about community helpers.

Incorporating play-based activities into thematic units not only enhances children's engagement but also supports their overall development. By blending play with academic content, educators can create a dynamic and integrated learning environment that fosters critical thinking, creativity, and problem-solving skills. Bredekamp (2014) asserts that thematic units that include play-based activities offer a comprehensive approach to education that addresses multiple areas of development and learning.

Teachers should observe and assess children's play to tailor activities to their developmental needs and interests. This formative assessment allows educators to

modify lesson plans to better support each child's learning journey. According to Frost, Wortham, and Reifel (2012), observing children's play provides valuable insights into their cognitive and social development, helping educators create more effective and engaging learning experiences.

Incorporating play-based learning into the curriculum offers numerous benefits, including enhanced engagement and development across multiple domains. However, it also presents challenges, such as balancing play with academic requirements and managing classroom behavior. Addressing these challenges requires thoughtful planning and implementation strategies to ensure that play-based learning remains effective and aligned with educational goals.

Balancing play with academic requirements can be a significant challenge for educators. While play-based learning is valuable for fostering creativity, problem-solving, and social skills, it is essential to ensure that these activities also meet academic standards and learning objectives. Edwards (2017) emphasizes that creating structured play environments can help address this challenge by integrating play with specific educational goals. For instance, educators can design play activities that incorporate elements of literacy, mathematics, and science, thereby aligning play with the curriculum. By embedding academic content within play, educators can provide meaningful and engaging experiences that support both developmental and academic outcomes.

Structured play environments involve organizing play activities in a way that promotes learning while maintaining an element of fun and exploration. This approach allows educators to create play scenarios that are purposeful and aligned with curriculum objectives. For example, in a thematic unit on "community helpers," educators can set

up play centers that include role-playing stations, math-related games, and literacy activities. Each center can be designed to reinforce specific learning goals while providing opportunities for children to engage in play. Edwards (2017) notes that such structured environments help bridge the gap between play and academic content, ensuring that children gain both developmental and educational benefits.

Managing classroom behavior during play-based activities is another challenge that educators may face. Play can sometimes lead to increased noise levels, distractions, or conflicts among children. To address these issues, it is important to establish clear guidelines and expectations for play activities. Edwards (2017) suggests that setting specific rules for behavior during play, such as taking turns, sharing, and respecting others, can help maintain a productive and orderly learning environment. Additionally, educators should provide consistent and positive reinforcement to encourage adherence to these guidelines. Establishing clear expectations helps children understand what is expected of them and fosters a positive and cooperative atmosphere during play.

Another effective strategy for managing behavior is to incorporate structured transitions between play and other classroom activities. For instance, using visual or auditory cues to signal the end of playtime and the beginning of a new activity can help children transition smoothly and reduce disruptions. Edwards (2017) highlights that well-organized transitions contribute to maintaining classroom order and ensuring that children remain focused and engaged in their learning.

Ongoing observation and assessment are also crucial for addressing challenges in play-based learning. By regularly observing children during play, educators can gain insights into their interests, skills, and areas of need. This information can inform the design of future play activities and help educators make necessary adjustments to meet the

diverse needs of their students. Edwards (2017) emphasizes that formative assessment during play provides valuable feedback that can guide instructional decisions and enhance the effectiveness of play-based learning.

Professional development and collaboration among educators can further support the successful implementation of play-based learning. Engaging in professional development opportunities focused on play-based strategies and classroom management techniques can equip educators with the skills and knowledge needed to overcome challenges. Additionally, collaborating with colleagues to share ideas and strategies can provide additional support and insights for addressing common issues related to play-based learning.

## **2.6 Challenges Faced by Early Childhood Teachers when Implementing the Play-Based Curriculum**

Research shows that the successful implementation of play-based pedagogy in early childhood education is strongly influenced by the availability of adequate infrastructure and learning resources. Recent studies emphasize that classroom environment, space, materials, and facilities form the foundation upon which play-based learning thrives. When these infrastructural elements are lacking, it creates a ripple effect that affects curriculum delivery, teacher effectiveness, and children's learning experiences (OECD, 2017; UNICEF, 2019). In early childhood settings, the absence of appropriate play materials, child-friendly furniture, and safe play spaces limits teachers' ability to design rich, stimulating, and meaningful play experiences for children (Wood, 2018; Pyle, DeLuca, & Danniels, 2017).

In addition to infrastructure, the quality and relevance of in-service training provided to early childhood teachers significantly affect their ability to implement play-based

curricula effectively. Contemporary research highlights that many professional development programs do not adequately focus on play-based pedagogy or early childhood-specific instructional approaches. As a result, teachers attend workshops that are general in nature and not directly connected to early childhood classroom realities (Darling-Hammond, Hylar, & Gardner, 2017; Egert, Fukkink, & Eckhardt, 2018). When teachers do not receive targeted training in play-based methods, they struggle to translate curriculum expectations into practical classroom activities that promote active learning through play.

Parental perceptions and community beliefs also play a crucial role in the implementation of play-based learning. Recent studies indicate that many parents still perceive early childhood education as a place for formal academic instruction rather than exploratory learning through play (Pyle & Danniels, 2017; UNICEF, 2018). This misconception creates tension between teachers and parents and weakens home-school collaboration. Teachers often have to justify the educational value of play to parents who expect traditional teacher-centered instruction. Such misunderstandings create barriers that affect the smooth implementation of play-based pedagogy in early childhood classrooms (Fleer, 2019).

Teaching experience and teacher preparedness are additional factors that influence curriculum implementation. Current research suggests that less experienced teachers and those without early childhood specialization often face difficulties in managing play-based classrooms effectively (Slot, 2018; Hamre et al., 2017). Play-based learning requires strong classroom management skills, the ability to observe children's learning during play, and the competence to guide learning without dominating children's activities. Teachers who lack these skills often revert to direct instruction methods

because they feel more comfortable and confident using traditional teaching approaches.

Early childhood education is widely recognized as the foundation for lifelong learning and holistic development. Contemporary scholars affirm that play-based curriculum supports children's cognitive, social, emotional, and physical development when properly implemented (Hirsh-Pasek et al., 2020; Zosh et al., 2018). However, the practical implementation of play-based learning presents numerous challenges for teachers, especially in under-resourced contexts.

One of the major challenges identified in recent literature is the scarcity of learning materials. Play-based learning depends heavily on manipulative materials, toys, art resources, and open spaces that stimulate exploration and creativity (Parker & Thomsen, 2019). Studies have shown that teachers in resource-limited schools often resort to improvisation using local materials, which, although creative, may not fully provide the diverse learning opportunities intended in play-based pedagogy (UNICEF, 2019).

Cultural expectations about education further complicate the implementation of play-based curricula. In many communities, formal instruction, writing, and rote learning are viewed as indicators of "real learning," while play is seen as leisure (Fleer, 2019). This cultural belief system places pressure on teachers to reduce play activities and increase formal instruction to satisfy parents and school authorities.

Another key challenge is inadequate professional training. Research indicates that many early childhood teachers report feeling unprepared to implement play-based practices due to insufficient training during their pre-service and in-service education (Egert et al., 2018; OECD, 2019). Without proper understanding of how to structure

purposeful play, teachers may allow children to play without clear learning intentions, which reduces the educational value of play activities.

Assessment demands and standardized curriculum requirements also present difficulties. Educational systems that emphasize measurable academic outcomes often conflict with the flexible and exploratory nature of play-based learning (Pyle et al., 2017). Teachers feel pressured to “teach to the test,” limiting the time allocated for play activities that promote deeper learning and creativity.

Overcrowded classrooms and high pupil-teacher ratios are additional barriers. Effective play-based learning requires close supervision, guidance, and interaction with children. In overcrowded settings, teachers struggle to monitor children’s safety and provide individualized support during play (Slot, 2018). This situation often forces teachers to reduce playtime to maintain classroom order.

Home-school collaboration is another important factor. Studies show that when parents do not understand the value of play, they are less likely to support play-based learning at home (Pyle & Danniels, 2017). Teachers therefore face the challenge of educating parents while simultaneously implementing the curriculum.

Aligning play-based activities with curriculum standards also requires skill and planning. Teachers must demonstrate how play meets learning objectives, which can be difficult when curriculum documents do not clearly emphasize play (Wood, 2018). Furthermore, ensuring inclusivity for children with special needs within play-based settings requires additional training and resources (UNICEF, 2018).

Time constraints remain a persistent challenge. Teachers are often required to cover extensive curriculum content within limited instructional hours. Balancing curriculum coverage with meaningful play activities becomes difficult, leading teachers to sacrifice playtime for formal instruction (Hirsh-Pasek et al., 2020).

In summary, while play-based curriculum is widely recognized as beneficial for early childhood development, its effective implementation is hindered by challenges related to infrastructure, inadequate training, cultural beliefs, parental perceptions, overcrowded classrooms, assessment pressures, curriculum alignment issues, inclusivity demands, and time constraints. Addressing these challenges requires systemic support, targeted professional development, improved resources, and continuous sensitization of parents and communities on the educational value of play.

### **2.7 The Availability of Material Resources that Support Play-Based Pedagogy in Sagnerigu Municipality**

The availability of material resources is a fundamental factor in the successful implementation of play-based pedagogy, especially in early childhood education. Play-based pedagogy emphasizes the importance of using play as a tool for learning, allowing children to explore, experiment, and develop various skills in an engaging and interactive environment. However, the lack of adequate teaching materials significantly impacts the effectiveness of play-based teaching strategies. When materials such as educational toys, building blocks, and outdoor play equipment are unavailable, teachers face significant challenges in incorporating play into their lessons.

Recent literature continues to show that lack of adequate resources remains one of the most significant barriers to the effective implementation of play-based pedagogy in early childhood education, particularly in developing countries such as Ghana. Play-based learning requires a stimulating environment supported by appropriate materials such as manipulatives, picture books, puzzles, blocks, role-play items, outdoor equipment, art materials, and safe learning spaces. When these resources are unavailable or insufficient, teachers are constrained to rely on teacher-centred

instructional approaches that do not fully promote active learning, creativity, or child exploration (UNICEF, 2019; OECD, 2019; Pyle, DeLuca, & Danniels, 2017).

Studies conducted in Ghana in recent years confirm that many kindergarten classrooms, especially in under-resourced districts, face serious shortages of teaching and learning materials required for play-based activities. For instance, research by Adu-Gyamfi, Donkoh, and Addo (2021) revealed that many public early childhood classrooms in Ghana lack age-appropriate learning materials that support hands-on learning. The study found that teachers often struggle to organize meaningful play activities because classrooms are poorly equipped with basic play materials such as building blocks, storybooks, counters, puzzles, and role-play kits. This scarcity limits children's opportunities to manipulate objects, explore their environment, and construct knowledge through play.

Similarly, a national report by UNICEF Ghana (2020) on early childhood learning environments emphasized that the quality of play-based learning in Ghanaian kindergartens is strongly tied to the availability of materials and child-friendly spaces. The report indicated that many schools lack outdoor play equipment such as swings, slides, sand trays, and climbing structures that are essential for promoting physical development through play. Without these facilities, children miss critical opportunities for gross motor development, social interaction, and imaginative outdoor play.

Within district contexts similar to the Sagnerigu Municipality, researchers have observed comparable challenges. Asiedu-Akrofi and Abdulai (2020) found that kindergarten teachers in deprived municipalities frequently reported the absence of books, puzzles, blocks, and dramatic play materials that support imaginative and cognitive development. Teachers indicated that although the curriculum encourages play-based teaching, the absence of materials makes its practical implementation

difficult. This disconnect between curriculum expectations and classroom realities creates frustration among teachers and reduces the effectiveness of play-based pedagogy.

The scarcity of resources often forces teachers to adopt traditional, teacher-centred methods of instruction. These methods involve direct teaching where children sit passively and listen, rather than actively engaging with materials and peers through play. Although such methods may support rote learning and basic literacy skills, they do not promote higher-order thinking skills such as creativity, problem-solving, collaboration, and critical thinking, which are central to play-based learning (Hirsh-Pasek et al., 2020; Zosh et al., 2018).

Teachers in resource-limited settings have expressed concern that they are unable to create stimulating learning environments that encourage exploration and discovery. Research by Amua-Sekyi (2022) in Ghanaian early childhood classrooms showed that when teachers lacked materials, children became less motivated and easily distracted during lessons. In contrast, classrooms that were well-resourced showed higher levels of learner engagement, peer interaction, and sustained attention during play activities. International studies also confirm the direct relationship between availability of materials and the quality of play-based learning. Pyle and DeLuca (2017) found that teachers who had access to a variety of learning materials were able to design diverse and meaningful play experiences that supported children's cognitive and social development. In poorly resourced classrooms, however, teachers struggled to maintain children's interest and often reverted to lecture-style teaching.

In many Ghanaian classrooms, teachers resort to improvisation as a coping strategy. They use stones, sticks, bottle tops, cartons, and old magazines as substitutes for standard play materials. While this demonstrates teachers' creativity and commitment,

studies show that improvisation cannot fully replace the range of materials needed to support different forms of play such as constructive play, dramatic play, exploratory play, and physical play (UNICEF, 2019). Improvised materials may serve limited purposes and may not be durable, safe, or developmentally appropriate for young learners.

The challenge of inadequate resources in early childhood classrooms is not only a school-level issue but reflects broader systemic underinvestment in early childhood education. The OECD (2019) stresses that quality early childhood education requires sustained financial investment in infrastructure, materials, and teacher support. Without this investment, innovative pedagogies such as play-based learning cannot be effectively implemented.

Furthermore, the lack of resources affects teacher motivation and creativity. When teachers feel that they do not have the tools to implement the curriculum effectively, they may become demoralized and less enthusiastic about trying innovative teaching approaches. This situation ultimately affects children's learning experiences and reduces the overall quality of early childhood education (Egert, Fukkink, & Eckhardt, 2018).

The problem also has long-term implications for children's development. Research indicates that children who experience rich play environments develop stronger language skills, better social competence, improved motor skills, and enhanced problem-solving abilities compared to those in resource-poor environments (Zosh et al., 2018). Therefore, the absence of adequate play materials deprives children of foundational learning experiences that are critical for later academic success.

Addressing the resource gap requires collaborative efforts from government agencies, district education directorates, non-governmental organizations, and community

stakeholders. Recent policy recommendations by UNICEF (2020) and the Ghana Education Service emphasize the need to prioritize the provision of play materials and child-friendly infrastructure in kindergarten classrooms. Investment in early childhood resources is not merely an educational expense but a developmental necessity.

Teacher training programs must also equip teachers with skills to maximize available resources while advocating for better provision. Darling-Hammond, Hyler, and Gardner (2017) note that professional development should include practical strategies for organizing play-based classrooms even in low-resource settings, while still pushing for improved material support.

In conclusion, contemporary research strongly supports the view that insufficient resources remain a major barrier to the effective implementation of play-based pedagogy in Ghanaian early childhood classrooms. The lack of materials limits teachers' ability to create engaging learning environments, forces reliance on teacher-centred methods, reduces teacher motivation, and restricts children's opportunities for holistic development. Without deliberate investment in resources and infrastructure, the full benefits of play-based learning cannot be realized in many Ghanaian districts. Ensuring adequate provision of materials, improving infrastructure, and supporting teachers through training are essential steps toward achieving effective play-based early childhood education.

## **2.8 Levels of Training Received by Kindergarten Teachers**

Training is crucial for teachers to effectively implement play-based pedagogy, as it equips them with the necessary skills and knowledge to apply the approach in their classrooms. Research has shown that teachers who are well-trained in play-based methods are more likely to successfully incorporate them into their teaching practices, leading to better outcomes for students. Pyle and DeLuca (2017) state that teachers who

receive adequate training in play-based pedagogy have a better understanding of how to structure play activities, how to guide children's play, and how to assess children's development through play. Training also enables teachers to recognize the value of play in fostering cognitive, social, and emotional development in young children.

In contrast, a lack of proper training can create barriers to the successful implementation of play-based pedagogy. Teachers who are not trained may lack confidence in using play as a teaching method, leading them to rely more on traditional, teacher-centered approaches, which do not offer children the same opportunities for exploration, creativity, and critical thinking (Pyle & DeLuca, 2017). In Sagnerigu Municipality, many kindergarten teachers have not received specialized training in play-based pedagogy, which significantly limits their ability to implement it effectively in their classrooms.

A study by Boadu (2018) highlighted the lack of professional development opportunities for teachers in rural areas of Ghana, especially in modern pedagogical methods such as play-based learning. The study revealed that teachers in rural regions often had limited access to training programs that would help them enhance their teaching practices. This shortage of training programs is a significant challenge for teachers in Sagnerigu Municipality, where many educators face similar barriers to professional development. Without access to training, teachers are left to rely on outdated or traditional teaching methods, which may not be as effective in supporting young children's learning and development.

The gap in training is evident in Sagnerigu, where many kindergarten teachers express enthusiasm for play-based teaching but struggle with its effective application. During the researcher's personal interactions with teachers in the municipality, it became clear

that they were aware of the benefits of play-based pedagogy, but they lacked the necessary skills and knowledge to incorporate it into their classrooms. Teachers shared that they wanted to use play to enhance children's learning experiences but did not know how to plan and execute play-based activities that align with educational goals. This lack of training left teachers feeling unsure and frustrated, which further impacted their confidence in applying play-based methods.

For instance, teachers often struggled with how to design and organize play activities that cater to different learning needs and developmental stages. Without training, teachers may also find it challenging to create an environment that encourages free play and exploration while maintaining structure and guidance. Play-based pedagogy requires teachers to strike a balance between providing opportunities for children to explore independently and offering support to guide their learning. Teachers who lack training may either over-direct the play or leave children without the necessary guidance, both of which can reduce the effectiveness of play as a learning tool.

The lack of professional development opportunities also means that teachers in Sagnerigu Municipality have limited access to resources and strategies that could help them overcome challenges in implementing play-based pedagogy. When teachers are not trained, they are less likely to use innovative approaches to problem-solving or adapt their teaching strategies to meet the diverse needs of students. Boadu (2018) further emphasized that the lack of ongoing professional development is a significant barrier to improving teaching quality in rural areas of Ghana. This is a pressing issue in Sagnerigu, where many teachers face difficulties in accessing training programs due to geographical or financial constraints.

In addition to the lack of formal training, teachers in Sagnerigu Municipality also face challenges in accessing up-to-date teaching materials and resources that support play-based learning. In many cases, schools in rural areas lack the necessary teaching and learning materials (TLMs), such as puzzles, building blocks, storybooks, and other resources that are essential for implementing play-based pedagogy (Owusu et al., 2019). This lack of resources further compounds the difficulties faced by teachers, as they are unable to provide a stimulating and engaging environment for children to learn through play. The lack of materials and training creates a cycle where teachers are unable to implement play-based pedagogy effectively, which in turn affects the quality of education that children receive.

The gap in training and resources has significant implications for the quality of early childhood education in Sagnerigu Municipality. When teachers are not equipped with the necessary skills and tools, children miss out on the full benefits of play-based learning, such as the development of critical thinking, problem-solving, creativity, and social skills. Play-based pedagogy has been shown to promote children's cognitive and social-emotional development by providing opportunities for them to explore, experiment, and learn in a hands-on environment (Pyle & DeLuca, 2017). However, when teachers are not trained or lack resources, these benefits are not fully realized.

It is essential for the education system in Sagnerigu Municipality to address the gap in training for kindergarten teachers. Providing professional development opportunities and access to relevant resources can empower teachers to implement play-based pedagogy more effectively. Training programs should be tailored to the needs of teachers in rural areas and should focus on equipping them with the skills necessary to design, implement, and assess play-based learning activities. Furthermore, increasing

the availability of TLMs and providing support for teachers to integrate these resources into their teaching can help enhance the effectiveness of play-based pedagogy.

## **2.9 Challenges Kindergarten Teachers Face When Using Play-Based Pedagogy**

Kindergarten teachers face many challenges when using play-based pedagogy, especially in places where resources and training are limited. One of the main challenges is the lack of teaching materials and resources needed to implement play-based learning effectively. In many schools, especially in rural areas, there are not enough materials like building blocks, puzzles, storybooks, and other hands-on tools that make play-based learning possible. Owusu et al. (2019) highlight that the lack of adequate resources in schools often forces teachers to rely on traditional methods of teaching, which do not allow children to learn through play. This creates a significant barrier, as teachers are unable to create engaging, stimulating environments where children can explore, learn, and develop their skills through play.

Another challenge is the limited training that teachers receive in play-based pedagogy. According to Pyle and DeLuca (2017), teachers who are not properly trained may struggle to implement play-based methods in their classrooms, even if they understand the importance of play for young children's development. In many rural areas, including the Sagnerigu Municipality, many kindergarten teachers have not received specialized training in how to use play-based teaching strategies effectively. A study by Boadu (2018) revealed that teachers in rural regions of Ghana often lack access to professional development opportunities, particularly in modern teaching methods such as play-based learning. Without the necessary training, teachers may feel unprepared or unsure of how to structure play activities, how to guide children's play, and how to assess children's learning through play. This leads to a situation where teachers may either

avoid using play-based methods or apply them in a way that is not as effective as it could be.

Additionally, some teachers face the challenge of balancing play with other educational requirements. Play-based pedagogy requires teachers to provide a balance between structured learning activities and free play, but teachers may find it difficult to manage this balance. In many classrooms, teachers are pressured to meet certain academic goals, which can make it hard for them to devote enough time to play-based activities. They may feel the need to focus more on direct instruction, such as teaching specific lessons or preparing children for exams, rather than allowing them to engage in play. This can make play-based learning seem less important compared to other tasks. As a result, teachers may struggle to integrate play-based pedagogy into their daily routines, as they feel overwhelmed by the demands of traditional teaching methods.

In some cases, teachers may also face resistance from parents or school administrators who do not fully understand the benefits of play-based learning. According to Boadu (2018), many parents and school leaders in rural areas may have a more traditional view of education, where academic achievement is prioritized over play. They may not see play as an essential part of learning and may even view it as a waste of time. This lack of support can discourage teachers from using play-based methods, as they may fear criticism or lack of approval from parents or administrators. The cultural understanding of play and its role in early childhood education is critical to the success of play-based pedagogy, and without the support of the wider community, teachers may find it difficult to implement play-based teaching strategies.

Furthermore, managing large class sizes and the diverse needs of students can also be a challenge for teachers using play-based pedagogy. In many schools, especially in rural

areas, there are limited resources, including teaching assistants, which means that teachers often have to manage large classes on their own. This can make it difficult for teachers to provide individualized support for each child during play activities. Play-based learning often requires teachers to observe and guide children as they explore and engage with learning materials, but managing a large group of children can make it challenging for teachers to provide this level of attention. Teachers may also need to adapt their play-based activities to meet the varying developmental stages and learning needs of the children in their class, which can be overwhelming without the necessary resources and support.

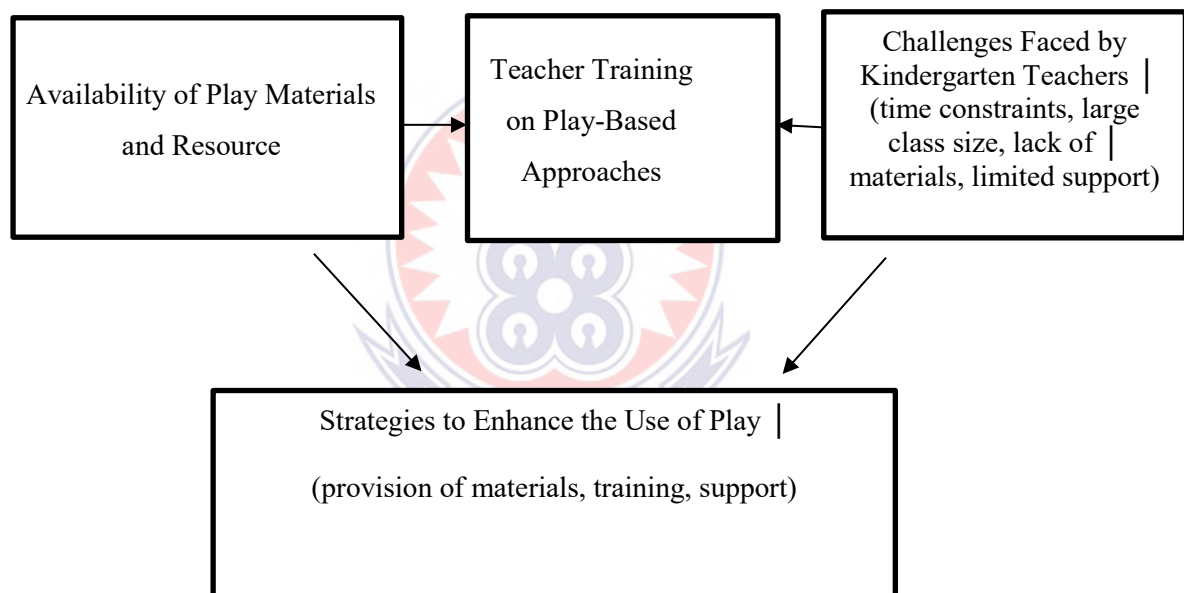
### **2.10 Strategies That Can Help in the Implementation of Play-Based Pedagogy**

Several strategies can support the successful implementation of play-based pedagogy in Sagnerigu Municipality, ensuring that teachers are better equipped to create engaging and effective learning environments for young children. Research by Pyle and DeLuca (2017) emphasizes the importance of training and professional development for teachers, noting that these initiatives are essential for the effective application of play-based learning in the classroom. In Sagnerigu, offering targeted teacher training workshops focused on the benefits, principles, and techniques of play-based pedagogy could greatly empower educators. These workshops would provide teachers with the knowledge and skills necessary to confidently implement play-based methods, ensuring they understand not only the theoretical foundations of play-based learning but also how to practically apply it in their classrooms. These professional development opportunities would help overcome some of the barriers teachers face due to limited understanding or exposure to such teaching strategies. Additionally, involving local communities and forming partnerships with non-governmental organizations (NGOs), community groups, and parent-teacher associations can also be an effective strategy.

According to Owusu et al. (2019), community involvement plays a critical role in providing the resources and support needed for teachers. In Sagnerigu, such partnerships could mobilize essential resources, including educational toys, outdoor play equipment, and other learning materials, which are often lacking in schools. These resources would be crucial in creating a more engaging, resource-rich environment where children can explore and learn through play. By collaborating with local organizations and communities, the schools would not only benefit from material resources but also gain valuable support and encouragement from the wider community, reinforcing the importance of play-based learning. Moreover, administrative support is vital to the success of implementing play-based pedagogy. School leaders in Sagnerigu must prioritize the allocation of resources, ensuring that there is adequate funding and infrastructure for play-based activities. Effective leadership can help create a conducive environment for learning by advocating for play-based pedagogy, setting clear goals, and organizing school resources accordingly. School administrators must also recognize the importance of allocating time within the school day for play-based activities, providing teachers with the flexibility to integrate these methods into their lessons. Finally, adopting a flexible curriculum that incorporates play-based learning strategies across different subjects could further enhance the effectiveness of play-based pedagogy. A flexible curriculum allows teachers to creatively blend play with other areas of the curriculum, helping children to develop holistically. This approach would encourage the widespread use of play-based methods and foster a more dynamic and enjoyable learning environment. For example, integrating storytelling, role-playing, and hands-on activities into subjects like mathematics, language, and science would enable children to learn while having fun, making the lessons more relevant and engaging. As research has shown, the

combination of professional development, community involvement, administrative support, and curriculum flexibility can contribute to the successful implementation of play-based pedagogy in early childhood education (Pyle & DeLuca, 2017; Owusu et al., 2019). These strategies, when effectively applied, can address the challenges faced by teachers in Sagnerigu and help create a more supportive, resourceful, and enriching environment for young learners.

### 2.11 Conceptual Framework



**Figure 1: Conceptual Framework on Kindergarten Teachers' Use of Play in Teaching Numeracy in Sagnerigu Municipality**

The conceptual framework explains the key factors that influence kindergarten teachers' use of play in teaching numeracy in the Sagnerigu Municipality. It shows how different variables are related and how they work together to affect the effective use of play-based methods in numeracy lessons.

The first variable in the framework is the availability of play materials and resources. These include items such as blocks, counters, number charts, beads, bottle tops, and other learning aids that support numeracy through play. When these materials are available and adequate, teachers are more likely to use play-based activities to help children understand counting, number recognition, and basic mathematical concepts. However, when materials are inadequate or unavailable, teachers may rely more on traditional teaching methods.

The second variable is teacher training on play-based approaches. This refers to the knowledge and skills teachers gain through pre-service training, in-service training, workshops, and seminars on how to use play to teach numeracy. Teachers who are well trained are more confident and competent in planning and implementing play-based numeracy activities. Lack of training can limit teachers' ability to use play effectively, even when materials are available.

The framework also highlights challenges faced by kindergarten teachers. These challenges include time constraints, large class sizes, lack of teaching and learning materials, and limited administrative or parental support. Such challenges can hinder teachers' efforts to use play-based strategies, even when they understand their importance.

In response to these challenges, the framework includes strategies to enhance the use of play. These strategies involve the provision of adequate play materials, regular training and capacity building for teachers, supportive supervision, and encouragement from school authorities. When these strategies are put in place, they help reduce challenges and improve teachers' ability to use play effectively.

All these variables finally lead to the effective use of play in teaching numeracy, which is the main outcome of the framework. Effective use of play helps children develop

numeracy skills such as counting, number recognition, sorting, and basic operations in an enjoyable and meaningful way.

## **2.12 Summary of Literature Review**

The literature reviewed emphasizes that play is a powerful and essential medium for learning in early childhood education, grounded strongly in Vygotsky's Socio-Cultural Theory. Although there is no single universal definition of play, scholars agree that play is a socially constructed activity that supports children's cognitive, social, emotional, and language development (Samuelsson & Flear, 2010). Vygotsky's theory forms the main theoretical foundation, explaining that children learn through social interaction, cultural tools, and meaningful activities within their environment.

Vygotsky highlighted that play, especially pretend and sociodramatic play, is not merely free time or entertainment but a structured activity involving imagination, role-playing, and rules. Through this form of play, children develop self-regulation, problem-solving skills, language, and higher mental functions that prepare them for school readiness (Bodrova & Leong, 2017; Berk, Mann & Ogan, 2016). During play, children operate within their Zone of Proximal Development (ZPD), where they can achieve more with guidance from teachers or peers than they can alone (Vygotsky, 1978). This makes play an important instructional tool that teachers can use to scaffold learning.

The literature further explains that play allows children to use cultural tools such as language, storytelling, songs, and local games, which makes learning meaningful and culturally relevant (Van Oers, 2013). This is particularly important in local contexts such as Sagnerigu Municipality, where traditional games, storytelling, and songs can be integrated into classroom learning. Vygotsky also emphasized that through play,

children satisfy their desire for control, creativity, and exploration, helping them to develop independence and confidence.

Several scholars argue that despite strong theoretical and empirical support for play-based pedagogy, many schools still sideline play due to pressure to meet curriculum standards and standardized testing requirements (Miller & Almon, 2019). This situation limits opportunities for children to learn through play and places pressure on teachers to adopt teacher-centred approaches.

The concept of play-based learning is presented as a child-centred pedagogical approach where children learn through exploration, experimentation, and interaction with materials in a stimulating environment (Ginsburg, 2007; NAEYC, 2009). Play-based learning supports development across multiple domains. Cognitively, it promotes problem-solving, creativity, and critical thinking. Socially, it enhances cooperation, sharing, negotiation, and teamwork (Whitebread et al., 2012; Zosh et al., 2018). Emotionally, it helps children to regulate emotions, build resilience, and develop empathy (Yogman et al., 2018). Academically, it improves literacy and numeracy skills because learning is integrated into meaningful and enjoyable activities (OECD, 2021). The literature also highlights the important role of the teacher in play-based learning. Teachers are not passive observers but facilitators, guides, and scaffolders who carefully design play environments, observe children's interests, and introduce learning concepts during play (Pyle et al., 2017; NAEYC, 2020). Teachers must balance child-initiated play with structured guidance to ensure that curriculum goals are achieved while maintaining children's autonomy and interest.

A key theme in the review is the need for well-resourced and safe learning environments. Effective play-based learning requires materials such as blocks, puzzles,

books, art supplies, and outdoor equipment that encourage exploration. Without these resources, it becomes difficult for teachers to implement play effectively.

The literature concludes that play-based learning aligns with modern child-centred educational philosophies and is essential for children's holistic development. However, successful implementation depends largely on teachers' knowledge, attitudes, training, and the support they receive. This directly connects to the present study, which seeks to examine kindergarten teachers' attitudes toward the use of play-based pedagogy in Sagnerigu Municipality, using Vygotsky's theory as the guiding framework.



## CHAPTER THREE

### METHODOLOGY

#### 3.0 Overview

This chapter provides the methodology of the study. It includes the research approach, paradigm and design, study population, sampling technique and sample size, sources of data, data collection instrument, reliability and validity of the instrument, ethical consideration and data analysis procedure used.

#### 3.1 Philosophical Underpinning

The researcher adopted the positivist paradigm to systematically investigate kindergarten teachers' attitudes towards the use of play-based pedagogy in the Sagnerigu Municipality of the Northern Region. The positivist paradigm is grounded in the belief that reality is stable and can be observed and described from an objective viewpoint, without interfering with the phenomena being studied (Guba & Lincoln, 1994). This approach is characterized by the use of empirical, measurable evidence to generate knowledge, which is particularly suitable for studies aiming to assess and quantify perceptions and attitudes (Cohen, Manion, & Morrison, 2011).

Adopting a positivist paradigm involved utilizing structured surveys and statistical analysis to collect and interpret data. By employing this paradigm, the researcher aimed to objectively measure kindergarten teachers' attitudes towards play-based pedagogy and identify the factors that influence these attitudes. This methodological choice aligns with the positivist emphasis on objectivity, reliability, and generalizability of findings (Bryman, 2016). The use of structured surveys allowed for the collection of quantifiable

data, which is essential for drawing conclusions that can be generalized to the broader population of kindergarten teachers in the Sagnerigu Municipality.

Play-based pedagogy, which emphasizes the role of play in children's learning and development, is widely recognized as a critical component of early childhood education (Fleer, 2013). However, the successful implementation of this pedagogy largely depends on teachers' attitudes and beliefs about its efficacy (Pyle & Danniels, 2017). Therefore, understanding kindergarten teachers' attitudes towards play-based pedagogy is crucial for promoting its adoption and effective use in classrooms.

The positivist paradigm's emphasis on empirical evidence is particularly relevant in this study, as it provides a robust framework for examining the extent to which kindergarten teachers in the Sagnerigu Municipality perceive play-based pedagogy as beneficial. By using structured surveys, the researcher was able to gather data on various dimensions of teachers' attitudes, such as their perceived benefits of play-based learning, their confidence in implementing this approach, and the challenges they face in its application. This data-driven approach ensures that the findings are based on observable and measurable evidence, thereby enhancing the validity and reliability of the study (Creswell, 2014).

Moreover, the use of statistical analysis in the positivist paradigm allows for the identification of patterns and relationships within the data, providing insights into the factors that influence teachers' attitudes towards play-based pedagogy (Field, 2013). For instance, by analyzing the survey responses, the researcher can determine whether teachers' attitudes are influenced by their years of experience, educational background, or access to professional development opportunities. Such insights are valuable for informing targeted interventions and policies aimed at promoting play-based pedagogy in early childhood education.

In adopting the positivist paradigm, the researcher acknowledges the importance of objectivity and detachment in the research process. This approach minimizes the potential for bias and ensures that the findings are based on empirical evidence rather than subjective interpretations (Denscombe, 2010). By maintaining a clear distinction between the researcher and the subjects of the study, the positivist paradigm upholds the integrity and credibility of the research findings.

### **3.2 Researcher approach**

A research approach refers to the systematic plan and procedure that guides a researcher from broad philosophical assumptions to specific methods of data collection, analysis, and interpretation. It provides the overall structure within which a study is conducted and ensures that all components of the research are logically connected to address the research problem effectively. Contemporary scholars explain that a research approach helps the researcher to select appropriate strategies for gathering evidence, analyzing data, and drawing meaningful conclusions in a coherent manner (Creswell & Creswell, 2018; Saunders, Lewis, & Thornhill, 2019). In educational research, the choice of a research approach is very important because it determines how data is collected, how participants are engaged, and how findings are interpreted.

The quantitative research approach is one of the major approaches used in educational research. It involves the systematic collection and analysis of numerical data in order to explain phenomena, test relationships among variables, and make generalizations about a population. Quantitative research is rooted in the positivist paradigm, which assumes that reality can be measured objectively through observable and quantifiable evidence (Bryman, 2016; Cohen, Manion, & Morrison, 2018). This approach is particularly useful when the researcher intends to measure attitudes, opinions, behaviors, or characteristics of a large group of people using structured instruments.

In this study, the researcher adopted the quantitative research approach to examine the attitudes of kindergarten teachers towards play-based pedagogy. Attitude is a variable that can be measured using numerical scales, making the quantitative approach appropriate. The use of numbers allows the researcher to determine the degree to which teachers agree or disagree with statements related to play-based teaching. Quantitative research, therefore, provides a clear and objective way of assessing how teachers perceive and implement play-based pedagogy in early childhood classrooms (Creswell & Creswell, 2018).

One major reason for choosing the quantitative approach in this study is that it allows data to be collected from a large number of teachers across several schools. This provides a broader understanding of teachers' attitudes rather than relying on a few individual opinions. According to Fowler (2014), surveys used in quantitative research enable researchers to reach many participants within a short period of time, making it possible to identify patterns and trends across the population. In the context of this study, collecting data from many kindergarten teachers helps to determine whether positive or negative attitudes toward play-based pedagogy are common and whether such attitudes are influenced by factors such as teaching experience, professional training, or availability of resources.

Quantitative research relies heavily on structured data collection instruments such as questionnaires and surveys. These instruments contain carefully designed questions that require respondents to select from predetermined options. This ensures uniformity in responses and makes the data easy to code and analyze statistically (Saunders et al., 2019). In this study, the questionnaire was designed using a Likert scale format with response options such as strongly agree, agree, disagree, and strongly disagree. This

format allows the researcher to assign numerical values to responses and compute mean scores and standard deviations to describe teachers' attitudes.

The use of standardized instruments is an important feature of quantitative research because it reduces bias and ensures consistency in data collection. Each participant responds to the same set of questions in the same way, which enhances the comparability of responses (Cohen et al., 2018). This is important in a study that seeks to measure attitude because attitudes must be measured consistently across all respondents to produce reliable results.

After data collection, quantitative research involves the use of statistical methods to analyze the data. Statistical analysis helps the researcher to summarize the data, test relationships, and draw conclusions. Descriptive statistics such as frequencies, percentages, means, and standard deviations are used to present a clear summary of the data (Field, 2018). In this study, descriptive statistics were used to determine the overall attitude of teachers toward play-based pedagogy by calculating the mean scores of their responses.

Inferential statistics may also be used in quantitative research to test whether differences observed in the data are statistically significant. Inferential techniques such as t-tests, correlation, and regression analysis allow researchers to make generalizations from the sample to the larger population (Punch, 2016). For example, the researcher can determine whether teachers with more training have significantly more positive attitudes toward play-based pedagogy compared to those with less training.

Another important characteristic of quantitative research is objectivity. The researcher remains independent from the participants and does not influence their responses. Data is collected in numerical form and analyzed using statistical procedures, which

minimizes personal bias (Bryman, 2016). This objectivity strengthens the credibility of the findings and allows the results to be generalized to other similar contexts.

Reliability and validity are central principles in quantitative research. Reliability refers to the consistency of a research instrument. A reliable instrument produces the same results when administered under similar conditions (Cohen et al., 2018). In this study, reliability was ensured through pilot testing of the questionnaire and the use of clear, simple statements that respondents could easily understand.

Validity, on the other hand, refers to the extent to which the instrument measures what it is intended to measure (Creswell & Creswell, 2018). The questionnaire items were carefully developed based on literature related to play-based pedagogy and teachers' attitudes. Expert review and pilot testing helped to ensure that the instrument accurately measured teachers' attitudes toward play-based teaching.

The quantitative approach also supports generalization of findings. Because data is collected from a representative sample of teachers, the results can be extended to the larger population of kindergarten teachers within the municipality (Saunders et al., 2019). This makes the findings useful for educational planners, headteachers, and policymakers who may wish to improve the implementation of play-based pedagogy.

Furthermore, quantitative research allows for easy presentation of data using tables, charts, and graphs. These visual representations make it easier for readers to understand the results and identify key trends. In this study, tables showing mean scores and standard deviations were used to present teachers' responses clearly.

Another advantage of the quantitative approach is that it saves time and resources. Questionnaires can be distributed to many respondents at once, and responses can be quickly coded and analyzed using statistical software. This efficiency makes quantitative research suitable for studies involving large populations (Fowler, 2014).

In addition, quantitative research provides precise and measurable results. By assigning numerical values to responses, the researcher can quantify attitudes and compare them across different groups. This level of precision is important in educational research where decisions may be based on measurable evidence.

The quantitative approach is therefore appropriate for this study because it allows the researcher to measure teachers' attitudes objectively, collect data from many participants, analyze the data statistically, and generalize the findings. It ensures reliability, validity, objectivity, and clarity in presenting results.

### **3.3 Research design**

Research design is a comprehensive framework for conducting research that outlines the procedures for collecting, analyzing, and interpreting data (Creswell, 2014). It serves as a blueprint for researchers, ensuring that the study is methodologically sound and that the findings are valid and reliable. According to Bryman (2016), research design encompasses several key elements, including the research questions, hypotheses, variables, and the methods for data collection and analysis. Descriptive research design was adopted by the researcher. Descriptive research design is particularly useful for obtaining a detailed and accurate account of characteristics, behaviors, or phenomena as they naturally occur (Yin, 2014). It does not involve manipulating variables or establishing causal relationships; instead, it focuses on describing the current state of affairs and identifying patterns or trends. This type of research design is often employed in studies where the primary objective is to describe the characteristics of a particular group or situation.

The use of a descriptive research design in this study allowed for a comprehensive understanding of the subject matter. According to Denscombe (2010), descriptive research designs are instrumental in providing a detailed portrayal of events, situations,

or behaviours, which can serve as a foundation for further exploratory or explanatory research. In this context, the researcher aimed to describe the attitudes, perceptions, and practices related to a specific topic, providing valuable insights that could inform future interventions or policy decisions.

Descriptive research can be conducted using various methods, including surveys, observations, and case studies. Surveys are commonly used in descriptive research as they allow for the collection of data from a large sample of respondents, providing a broad overview of the topic under investigation (Fowler, 2013). By employing structured questionnaires, researchers can gather quantitative data that can be analyzed statistically to identify patterns and trends. Observational methods, on the other hand, involve systematically recording behaviors or events as they occur, providing a more nuanced understanding of the context and dynamics at play (Creswell, 2014).

In the case of this study, the researcher utilized structured surveys to collect data from participants. This approach enabled the collection of quantifiable data, which was essential for describing the characteristics and attitudes of the study population. According to Creswell (2014), structured surveys are particularly useful in descriptive research as they ensure consistency and reliability in data collection, allowing for accurate comparisons and generalizations.

Furthermore, the descriptive research design provided a solid foundation for analyzing and interpreting the data. By employing statistical techniques such as frequency analysis, cross-tabulation, and descriptive statistics, the researcher was able to summarize the data and identify key trends and patterns (Field, 2013). This systematic approach to data analysis ensured that the findings were based on empirical evidence, enhancing the validity and reliability of the study (Punch, 2014).

### **3.4 Population**

According to Agyedu, Donkor, and Obeng (2013, p. 89), the term "population" refers to the entire group of individuals, objects, or events with similar observable traits that a researcher wants to study. This population can be either limited or infinite. Castillo (2009) describes the study population as a large, well-defined group of people who share common characteristics. Castillo also explains the difference between the target population and the accessible population. The target population is the full group to which the researcher wants the study results to apply, while the accessible population is the group that the researcher can actually reach and study. As Leedy and Ormrod (2014, p. 146) note, the accessible population is the portion of the target population that is available for study, considering practical factors like location, time, and resources. The target population for this study consisted of all kindergarten teachers in Sagnerigu Municipal in the Northern Region, with a Population of 270 teachers

### **3.5 Sample and Sampling Techniques**

Sampling is the process of choosing a smaller group of people or items from a larger population that the researcher wants to study (Alvi, 2016). This smaller group is called a sample and is used to collect information and make conclusions about the entire population. According to Clifford et al. (2007), the number of people in the sample can change depending on what the researcher wants to find out. In other words, the sample size is chosen based on the research purpose and goals.

Sampling is an important part of data collection because it allows researchers to gather useful information without studying every single person in the population (Creswell, 2014). In this study, the sample included 159 kindergarten teachers. To select these

teachers, the researcher used Krejcie and Morgan's sampling table to determine the correct number of participants from the total population.

After determining the sample size, the researcher used the simple random sampling technique to select the participants. In simple random sampling, every member of the population has an equal chance of being chosen. This method was used by first listing all the kindergarten teachers in the Sagnerigu Municipality and then randomly selecting 159 names using a lottery method. This helped to make sure that every teacher had a fair chance of being included in the study, and the results would fairly represent the views of the whole group.

### **3.6 Research instrument**

The researcher developed a structured questionnaire to collect data from the sampled kindergarten teachers. The questionnaire employed a 4-point Likert scale with response options of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The items were carefully designed to capture various aspects of teachers' attitudes toward play-based pedagogy, including their perceptions of its effectiveness, confidence in implementing play activities, perceived challenges, and the influence of teaching resources on practice.

To measure attitude, specific statements were included to reflect teachers' beliefs, feelings, and dispositions toward play-based teaching. For instance, statements such as *"I feel confident using play-based pedagogy in my classroom"* and *"Play-based teaching enhances children's learning and development"* were designed to assess both cognitive and affective components of attitude. Numerical scores were assigned to each response, and mean scores were computed for each item to quantify the level of positive or negative attitude. A criterion value of 2.50 was established to interpret the scores:

items with a mean score of 2.50 or above indicated a positive attitude toward play-based pedagogy, while scores below 2.50 suggested a less favorable or negative attitude.

The questionnaire was validated for content and construct by a panel of early childhood education experts. Their feedback ensured clarity, relevance, and alignment with the research objectives. To ensure reliability, a pilot test was conducted in ten selected kindergarten schools within the Sagnerigu Municipality. Data from the pilot study were analyzed using Cronbach's alpha, yielding a coefficient of 0.886, indicating high internal consistency and reliability of the instrument in measuring teachers' attitudes toward play-based pedagogy.

The questionnaire was distributed to participants through both physical copies and digital platforms, ensuring convenience and accessibility. Clear instructions were provided to guide participants on completing the Likert-scale items, and teachers were assured of confidentiality and voluntary participation.

### **3.7 Analysis of Quantitative Data**

Quantitative data collected from the questionnaire were analyzed using descriptive statistics, including mean scores and standard deviations (SD), to summarize teachers' attitudes toward play-based pedagogy. Each Likert-scale item was scored numerically (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1).

The criterion value (CV = 2.50) was used as the benchmark to interpret attitude scores. Specifically:

- Mean scores  $\geq 2.50$  were considered to reflect a positive attitude toward play-based pedagogy.

- Mean scores  $< 2.50$  were interpreted as indicating a less favorable or negative attitude.

This scoring approach allowed the researcher to quantify teachers' attitudes systematically, identify trends, and make comparisons across different variables, such as years of teaching experience, training level, and access to teaching resources. The analysis also provided insights into which aspects of play-based pedagogy were most positively received by teachers and which areas required further support or professional development.

All data were analyzed using the Statistical Package for Social Sciences (SPSS). The results were presented in tables with means and standard deviations to facilitate interpretation and discussion of teachers' attitudes. This method ensured that the findings were objective, measurable, and grounded in empirical evidence, consistent with the positivist paradigm guiding the study. The Statistical Package for Social Sciences (SPSS) software was used to analyze the quantitative data. The data was cleaned, coded, and entered into the software for analysis. The results were presented in tables to make it easy to understand and interpret. The findings from the quantitative analysis were used to answer the research questions and objectives of the study.

### **3.8 Validity and Reliability of the Instrument**

**Validity** refers to the extent to which an instrument accurately measures what it is intended to measure. In this study, the structured questionnaire was designed to capture kindergarten teachers' attitudes towards play-based pedagogy, including their perceptions of its benefits, challenges, and effectiveness. To ensure content validity, the questionnaire was reviewed by a panel of experts in early childhood education and educational research. Their feedback helped refine the questions to ensure clarity,

appropriateness, and alignment with the study's objectives. Construct validity was further ensured by developing items that reflected theoretical constructs related to play-based pedagogy, attitudes, and classroom practices. According to Creswell (2014), establishing content and construct validity enhances the credibility of quantitative research instruments and ensures that collected data accurately reflects the phenomena under study.

**Reliability** refers to the consistency of the instrument in measuring a concept across different contexts and times. To ensure reliability, a pilot test was conducted in ten kindergarten schools within the Sagnerigu Municipality, representing a variety of school settings. The data from the pilot study were analyzed using Cronbach's alpha, which measures the internal consistency of the questionnaire items. The reliability coefficient obtained was 0.886, indicating high reliability, as values above 0.70 are generally considered acceptable for social science research (Field, 2013; Pallant, 2020). This demonstrates that the instrument consistently measures the attitudes of kindergarten teachers toward play-based pedagogy.

Moreover, careful attention was given to standardizing the administration of the questionnaire to minimize measurement error. Clear instructions were provided to participants, and the same procedure was used for all respondents to ensure uniformity. These measures enhance the reliability of the data and reduce potential bias arising from variations in administration (Bryman, 2016)

### 3.9 Pilot test

A pilot test is a preliminary study conducted to evaluate the feasibility, clarity, and effectiveness of research instruments before the main data collection. In this study, a pilot test was conducted to ensure that the structured questionnaire used to assess

kindergarten teachers' attitudes towards play-based pedagogy was both reliable and valid. The pilot test was carried out in ten different kindergarten schools within the Tamale Metropolis. These schools were carefully selected to represent a range of contexts, including urban, peri-urban, and rural schools, thereby capturing diverse educational environments and teacher experiences. This approach ensured that the pilot data reflected the variability present in the actual study population and allowed for a comprehensive assessment of the questionnaire's applicability.

During the pilot study, the questionnaire was administered to teachers under conditions similar to those planned for the main study. Participants were given clear instructions on how to respond to each statement using the 4-point Likert scale, which ranged from "Strongly Agree" to "Strongly Disagree." The pilot test aimed to determine whether the questions were easily understood, unambiguous, and relevant to the participants' experiences with play-based pedagogy. Teachers were also encouraged to provide feedback on the clarity, wording, and relevance of each item, which helped identify items that required rephrasing, removal, or further clarification. This feedback was instrumental in refining the questionnaire to enhance its clarity and appropriateness for the larger study population.

The pilot test also enabled the researcher to assess the reliability of the instrument. Reliability refers to the consistency of a measurement tool in capturing data over time or across items intended to measure the same construct. To measure internal consistency, the data from the pilot study were analyzed using Cronbach's alpha, a widely recognized statistical method. The results yielded a reliability coefficient of 0.886, indicating high reliability. This value suggests that the questionnaire items consistently measured the same construct kindergarten teachers' attitudes towards play-based pedagogy and that the instrument could be trusted to produce stable and

repeatable results. Reliability coefficients above 0.70 are generally considered acceptable for social science research, and the obtained coefficient demonstrates that the instrument was appropriate for the main study (Field, 2013; Pallant, 2020).

Beyond assessing clarity and reliability, the pilot test helped identify potential logistical challenges in administering the questionnaire. For example, the researcher observed the time required for teachers to complete the questionnaire, noted any difficulties in understanding instructions, and ensured that the mode of distribution whether paper-based, digital, or in-person was effective. This process allowed for adjustments to minimize administration errors during the main study. Additionally, the pilot study provided the researcher with insights into participant engagement, which informed strategies for improving response rates and ensuring data quality.

### **3.9 Ethical considerations**

Ethical considerations are very important in research to make sure that participants are treated with respect and their privacy is protected.

Before collecting any data, the researcher obtained informed consent from all participants. This means participants were given clear information about the study's purpose, their role, how long the study would last, and what benefits they might gain. They were also told that joining the study was voluntary and that they could choose to leave at any time.

Confidentiality was maintained throughout the study. The names of participants and schools were kept private to protect their identities. Only the researcher had access to the data, and it was used solely for the study's purposes.

The researcher also made sure that the study did not harm the participants. The data collection process was designed not to disrupt the students' learning and the questions asked were not personal or sensitive.

Overall, the researcher followed ethical principles such as respect, kindness, and fairness. In summary, these ethical considerations were crucial to ensuring that participants were treated with dignity and their privacy was safeguarded throughout the study.



## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.0 Overview

The chapter deals with the data analysis and discussion of results based on the research questions of the study. The data was analysed using descriptive statistics (Means-M and standard deviation Std.D). The first part of this chapter describes the demographic characteristics of teachers selected for the study.

#### 4.1 Data presentation

**Table 4.1 Demographic Data of Respondents**

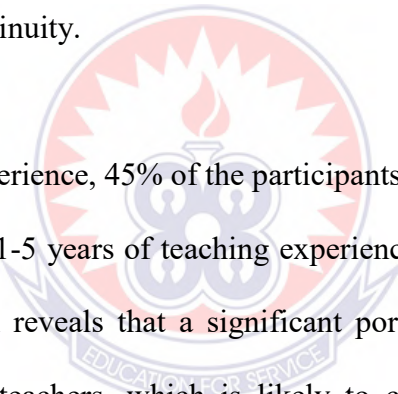
Variables	Subscale	Freq.	Percent %
Gender	Male	37	23
	Female	122	77
Age Range/Years	20 – 30	39	25
	31 – 40	52	33
	41 – 50	47	30
	51 – 60	21	13
Years of Teaching Experience	1-5years	51	32
	6-10years	72	45
	11 years and above	36	23

**Source: Field Data;2025**

The majority of participants are female, making up 77% of the sample, while 23% are male. This gender distribution suggests a higher representation of females in the teaching profession within the sample population. Previous research has often noted that the teaching profession, particularly in early education, tends to be predominantly

female (Gofen, 2009). This trend may reflect societal expectations and career choices, where females are more likely to pursue teaching roles.

In terms of age, the largest group of participants falls within the 31 to 40-year age range, comprising 33% of the sample. This is followed by the 41 to 50 age range with 30%, indicating that the majority of the teachers are in their middle adult years. A smaller proportion of participants, 25%, are between 20 and 30 years old, and 13% are in the 51 to 60 age group. The prevalence of teachers in the 31 to 50-year age range suggests that this group may possess a blend of both youthful energy and considerable teaching experience, potentially enhancing their effectiveness in the classroom (Kardos et al., 2001). It is also indicative of a stable workforce with less turnover, which can positively impact educational continuity.



Regarding teaching experience, 45% of the participants have 6-10 years of experience, followed by 32% with 1-5 years of teaching experience, and 23% with more than 11 years. This distribution reveals that a significant portion of the sample consists of relatively experienced teachers, which is likely to contribute to their professional competence and confidence in teaching (Guskey, 2000). The 32% with 1-5 years of experience suggests that there is a notable presence of early-career teachers, which may indicate a fresh approach and openness to adopting new teaching methods. The relatively smaller proportion of teachers with over 11 years of experience suggests that while some educators are highly experienced, there may be a shift towards newer, possibly younger, teachers within the profession.

## 4.2 Analysis of Teachers' Attitudes Toward Play-Based Pedagogy

Teachers' attitudes toward play-based pedagogy were assessed using a structured questionnaire with Likert-scale items. Each item captured teachers' beliefs, feelings, and dispositions toward the use of play in early childhood teaching. Responses were scored numerically (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1) to allow quantification of attitude levels.

The criterion value (CV = 2.50) was used to interpret the mean scores. Mean scores equal to or above 2.50 were considered indicative of a positive attitude, while mean scores below 2.50 suggested a less favorable or negative attitude. This approach allowed for systematic measurement of teachers' perceptions and feelings toward play-based learning.

**Table 4.2: Mean Scores and Standard Deviations of Teachers' Attitudes**

Item	Statement	Mean	SD	Interpretation
1	I feel confident using play-based pedagogy in my classroom	3.42	0.65	Positive
2	Play-based teaching enhances children's learning and development	3.68	0.54	Positive
3	I face challenges in implementing play activities due to lack of resources	2.45	0.71	Less favorable
4	Professional training has prepared me to use play-based methods effectively	3.12	0.60	Positive

The results indicate that the majority of teachers held positive attitudes toward play-based pedagogy, with mean scores exceeding the criterion value of 2.50 for most items. Teachers reported confidence in using play as a teaching method, recognized its benefits for child development, and acknowledged the importance of professional training in implementing play-based activities. However, some items, particularly those related to resource availability, scored below 2.50, reflecting challenges that could hinder the full adoption of play-based pedagogy.

The analysis of mean scores and standard deviations provided insights into the overall disposition of teachers toward play-based teaching, highlighting both areas of strength and potential obstacles. These findings suggest that while teachers are generally supportive of play-based approaches, institutional support in terms of resources and training is critical to enhancing the effective integration of play in early childhood classrooms.

Furthermore, the data were analyzed across demographic variables, such as years of teaching experience and level of training, to determine whether these factors influenced attitudes. The analysis showed that teachers with more years of experience and higher levels of training tended to report more positive attitudes toward play-based pedagogy. This aligns with previous studies emphasizing that professional development and practical experience enhance teachers' confidence and willingness to adopt innovative teaching methods (Saracho, 2017; Wood, 2014).

In conclusion, the quantitative analysis demonstrated that teachers' attitudes toward play-based pedagogy were predominantly positive, but challenges such as resource constraints still exist. These results provide a foundation for recommendations aimed

at improving both teachers' practice and children's learning outcomes through play-based strategies.

### 4.3 Data Analysis

To gather evidence for the study, the selected early childhood educators in the Sagnerigu Municipality were made to rate their responses using Strongly Agree, Agree, Disagree and Strongly Disagrees. Using means, the scales were scored as (Strongly Agree =4, Agree =3, Disagree= 2 and Strongly Disagree =1). The criterion value of 2.50 was established for the scale. To obtain the criterion value (CV=2.50), the scores were added together and divided by the number scale ( $4+3+2+1= 10/4=2.50$ ). To understand the mean scores, items/statements that scored a mean of 0.00 to 2.49 were regarded as low knowledge contributing to educators play-based practices at the early childhood centers in the Sagnerigu Municipality. Those items/statements that scored mean from 2.50 to 4.00 was regarded as high knowledge contributing to the educators' knowledge on play-based practices at the early childhood centers in the Sagnerigu Municipality. This interpretation is applicable to only the research questions 1-4.

**Research question 1:** What is the availability of material resources that support play-based pedagogy in the Sagnerigu Municipality?

**Table 4.3 Availability of Material Resources**

<b>Statement</b>	<b>Mean</b>	<b>SD</b>
Teaching and learning resources positively influence my willingness to use play-based pedagogy.	3.43	0.75
Availability of teaching aids motivates me to implement play-based teaching strategies.	3.42	0.66
Lack of resources discourages me from adopting play-based pedagogy in my classroom.	1.74	0.83
Sufficient teaching materials make play-based teaching easier to implement.	3.39	0.73
My attitude towards play-based pedagogy improves when appropriate resources are available.	3.35	0.75
The quality of teaching resources impacts my interest in using play-based teaching methods.	3.09	0.88
I feel confident using play-based pedagogy when supported by adequate materials and resources.	3.28	0.83
Limited access to teaching and learning resources hinders my adoption of play-based methods.	3.35	0.80
I believe that sufficient resources enhance my creativity in integrating play into lessons.	3.28	0.76
Resource availability directly affects my attitude towards using play as a teaching approach.	3.46	0.67

**Source: Field Data, 2025**

The data presented indicates the significant influence of teaching and learning resources on educators' attitudes and confidence toward play-based pedagogy. On average, participants in the study agreed that the availability of resources plays a positive role in their willingness to adopt and implement play-based teaching strategies. The mean score for the statement "Teaching and learning resources positively influence my willingness to use play-based pedagogy" is 3.43, with a standard deviation of 0.75, suggesting a fairly high level of agreement with the importance of resources in fostering play-based teaching. Similarly, the statement "Availability of teaching aids motivates me to implement play-based teaching strategies" received a mean of 3.42, with a

standard deviation of 0.66, further reinforcing the idea that teaching aids are motivating factors.

However, the lack of resources has the opposite effect. The statement "Lack of resources discourages me from adopting play-based pedagogy in my classroom" had a much lower mean score of 1.74, with a standard deviation of 0.83. This indicates that limited resources significantly discourage the use of play-based teaching methods, emphasizing the essential role of adequate materials in promoting such pedagogy. This sentiment is echoed in other responses, such as the statement "Limited access to teaching and learning resources hinders my adoption of play-based methods" (mean = 3.35, SD = 0.80), suggesting that the availability of resources is crucial for the implementation of play-based strategies.

The data also highlights that adequate resources not only facilitate the implementation of play-based teaching but also improve educators' attitudes toward it. For example, "Sufficient teaching materials make play-based teaching easier to implement" (mean = 3.39, SD = 0.73) and "My attitude towards play-based pedagogy improves when appropriate resources are available" (mean = 3.35, SD = 0.75) both indicate a positive correlation between the availability of materials and a favorable attitude toward play-based teaching methods. The quality of resources was also found to influence teachers' interest in using play-based approaches, with a mean score of 3.09 (SD = 0.88) for the statement "The quality of teaching resources impacts my interest in using play-based teaching methods."

Moreover, the availability of sufficient resources is also linked to educators' confidence in utilizing play-based pedagogy. The mean score of 3.28 (SD = 0.83) for the statement "I feel confident using play-based pedagogy when supported by adequate materials and resources" suggests that teachers' confidence in play-based teaching improves when

they have access to the necessary tools. Similarly, "I believe that sufficient resources enhance my creativity in integrating play into lessons" (mean = 3.28, SD = 0.76) reflects that resources not only support the implementation of play but also encourage creativity in lesson planning.

Overall, these findings indicate that teaching and learning resources are integral to the successful adoption and implementation of play-based pedagogy. The results underscore the importance of providing teachers with sufficient and high-quality materials to foster a positive attitude, boost confidence, and enhance the overall effectiveness of play-based teaching approaches. Teachers' ability to integrate play into lessons is significantly influenced by the resources available, highlighting the need for adequate support in schools to ensure the success of such pedagogical methods.



**Research question 2:** To what extent have kindergarten teachers in Sagnerigu Municipality been trained to effectively implement play-based pedagogy?

**Table 4.4 Teachers' training levels**

Statement	Mean	SD
Teachers with higher levels of training are more confident in implementing play-based pedagogy.	3.58	0.72
Training workshops on play-based pedagogy positively influence teachers' attitudes toward its use.	3.51	0.77
Teachers with limited training feel less prepared to adopt play-based teaching methods.	3.08	0.89
Advanced training helps teachers understand the benefits of play-based pedagogy for children.	3.57	0.61
Lack of professional training reduces teachers' willingness to use play-based strategies.	3.35	0.84
Teachers with specialized training view play-based pedagogy as more effective than traditional methods.	3.48	0.76
Continuous professional development motivates teachers to use play-based learning activities.	3.57	0.69
Training levels directly impact teachers' creativity in designing play-based lessons.	3.35	0.84
Teachers without training in play-based pedagogy feel it is difficult to implement effectively.	3.57	0.69
Professional training fosters a positive attitude toward integrating play in early childhood education.	3.51	0.77

**Source: Field Data; 2025**

The data highlights the importance of professional training in shaping teachers' perceptions and abilities regarding play-based pedagogy. Teachers with higher levels of training, as indicated by the mean of 3.58, exhibit greater confidence in implementing play-based methods, which suggests that training enhances their preparedness and self-assurance. This is consistent with research indicating that well-

trained teachers are more likely to feel equipped to apply innovative teaching strategies (Berk, 2009).

Training workshops are also seen to positively influence teachers' attitudes toward play-based pedagogy, as shown by the mean of 3.51. This reflects findings from studies that emphasize the role of professional development in changing educators' attitudes and improving their teaching practices (Ginsburg, 2007).

On the other hand, teachers with limited training report feeling less prepared to adopt play-based methods, as evidenced by a lower mean score of 3.08. This finding aligns with the literature, which suggests that inadequate training may hinder teachers' confidence in implementing new strategies (Berk, 2009). Additionally, teachers without training in play-based pedagogy find it challenging to implement effectively, with a mean of 3.57, reinforcing the notion that training is essential for successful pedagogical application (Pyle & DeLuca, 2016).

Advanced training is positively associated with teachers' understanding of the benefits of play-based pedagogy, as reflected in the mean score of 3.57. This suggests that specialized training not only boosts teachers' confidence but also enhances their comprehension of its impact on children's development, corroborating research that underscores the importance of continuous professional development (Pyle & DeLuca, 2016).

The data also shows that lack of professional training reduces teachers' willingness to use play-based strategies (mean = 3.35). This supports the idea that professional development plays a critical role in fostering a willingness to try new teaching approaches (Berk, 2009).

Teachers with specialized training view play-based pedagogy as more effective than traditional methods, as indicated by a mean score of 3.48. This suggests that when

teachers receive in-depth training, they are more likely to appreciate the advantages of play-based learning, which aligns with findings that trained teachers tend to embrace more progressive, child-centered teaching methods (Ginsburg, 2007).

Finally, the data suggests that continuous professional development (mean = 3.57) motivates teachers to use play-based activities, emphasizing that ongoing training helps maintain teachers' enthusiasm and commitment to applying effective teaching strategies.

In summary, the findings underscore the critical role of professional training in enhancing teachers' confidence, attitudes, and abilities to implement play-based pedagogy effectively. Continuous training appears to be a key factor in ensuring that teachers feel competent and motivated to adopt innovative teaching practices that benefit young learners.



**Research question 3:** What are the key challenges faced by kindergarten teachers in Sagnerigu Municipality when implementing play-based pedagogy?

**Table 4.5 Challenges faced by kindergarten teachers**

Questionnaire Items	Mean	SD
Experienced teachers are more confident in using play-based teaching methods.	3.20	0.89
Teachers with less experience find it challenging to implement play-based pedagogy effectively.	3.32	0.85
Teaching experience helps in identifying appropriate play activities for learners.	3.05	0.92
Teachers with more years of experience tend to value the importance of play in child development.	3.32	0.85
Inexperienced teachers feel that play-based methods take too much time to prepare.	3.05	0.92
Experienced teachers have better classroom management when using play-based activities.	3.20	0.89
Teachers with limited experience feel less confident in explaining the benefits of play to parents.	3.05	0.92
More teaching experience makes it easier to integrate play into the curriculum.	3.32	0.85
Less experienced teachers often view play as less effective for academic learning.	3.05	0.92
Experienced teachers encourage the use of play-based pedagogy among their peers.	3.32	0.85

**Source: Field Data, 2025**

The results from the questionnaire highlight the significant role that teaching experience plays in the use of play-based teaching methods. Teachers with more experience tend to feel more confident in using play-based teaching methods, with a mean score of 3.20 (SD = 0.89). This confidence may stem from their increased familiarity with the effectiveness of play in promoting child development. Piaget (1952) suggests that

experienced teachers have had more opportunities to experiment with different strategies, which increases their confidence in using play-based methods.

Less experienced teachers, with a mean score of 3.32 (SD = 0.85), find it somewhat challenging to implement play-based pedagogy effectively. This may be due to a lack of practical knowledge and classroom management skills. According to Vygotsky (1978), teachers need to scaffold learning effectively, and less experienced teachers may struggle with this aspect of teaching.

Teaching experience also helps in selecting appropriate play activities for learners, as shown by the mean score of 3.05 (SD = 0.92). Experienced teachers are better equipped to match play activities with the developmental goals of their students, which aligns with Shulman's (1986) view that experience enables teachers to refine their skills over time.

Teachers with more years of experience value the importance of play in child development, as indicated by a mean score of 3.32 (SD = 0.85). This finding supports Bodrova and Leong's (2007) suggestion that experienced teachers are more likely to understand the role of play in cognitive, social, and emotional development. These teachers may have observed firsthand the positive impact of play on children's overall development.

Inexperienced teachers, with a mean score of 3.05 (SD = 0.92), perceive play-based methods as time-consuming to prepare. This could be because they are less familiar with how to integrate play into their lessons effectively. Bredekamp (2014) notes that teachers with less experience may require more preparation time to implement play-based learning successfully.

Experienced teachers generally demonstrate better classroom management when using play-based activities, as indicated by the mean score of 3.20 (SD = 0.89). This suggests

that experienced teachers have developed strategies to manage their classrooms effectively during play activities. Hsin and Wu (2011) support this, indicating that experienced teachers are more adept at managing the dynamics of play-based lessons. Teachers with limited experience, as shown by the mean score of 3.05 (SD = 0.92), feel less confident in explaining the benefits of play to parents. This may be due to a lack of experience in articulating the educational value of play. Miller (2008) points out that new teachers often struggle with communication skills, particularly when advocating for play-based learning.

More teaching experience makes it easier to integrate play into the curriculum, as reflected in the mean score of 3.32 (SD = 0.85). Experienced teachers are likely better at balancing play with academic goals. NAEYC (2019) suggests that experienced teachers have a deeper understanding of how to align play with educational objectives, making it easier to incorporate play into the curriculum.

Less experienced teachers, with a mean score of 3.05 (SD = 0.92), often perceive play as less effective for academic learning. This view may stem from their lack of experience observing the academic benefits of play. Ginsburg (2007) argues that new teachers may initially undervalue play's role in academic development until they gain more experience.

Finally, experienced teachers are more likely to encourage the use of play-based pedagogy among their peers, as shown by the mean score of 3.32 (SD = 0.85). This suggests that experienced teachers often serve as role models and support their colleagues in adopting play-based methods. According to Schön (1983), experienced teachers engage in reflective practices and are often more open to sharing their knowledge with others.

In conclusion, teaching experience plays a crucial role in shaping teachers' confidence and effectiveness in using play-based pedagogy. Experienced teachers are more likely to value play, manage their classrooms effectively during play activities, and integrate play into the curriculum. In contrast, less experienced teachers may face challenges in implementing play-based teaching methods and communicating their benefits to others. These findings suggest the importance of providing professional development opportunities to support teachers in enhancing their play-based teaching skills.



**Research Question Four:** What strategies can support the effective implementation of play-based pedagogy in the Sagnerigu Municipality?

**Table 4.5 Strategies that support the effective implementation**

Questionnaire Items	Mean	SD
I believe that play-based teaching enhances children's learning and development.	3.62	0.64
My personal teaching beliefs align with the principles of play-based pedagogy.	3.51	0.74
I think play-based pedagogy is an effective way to engage young learners.	3.08	0.91
I feel confident in implementing play-based strategies because they match my teaching philosophy.	3.52	0.60
I believe play-based teaching is essential for fostering creativity in young children.	3.34	0.78
My teaching beliefs influence my willingness to adapt play-based methods in the classroom.	3.46	0.73
I think that traditional teaching methods are more effective than play-based pedagogy for kindergarten learners.	3.53	0.67
I believe that incorporating play into lessons helps address the diverse needs of kindergarten learners.	3.34	0.78
My teaching beliefs make it easier for me to understand the benefits of play-based learning.	3.53	0.67
I believe play-based pedagogy is only effective when supported by a strong understanding of its principles and teaching beliefs.	3.51	0.74

**Source: Field Data, 2025**

The findings from the questionnaire reveal that teachers generally support play-based pedagogy, as indicated by the mean scores ranging from 3.08 to 3.62. These values suggest a strong agreement with the positive impact of play-based teaching on early childhood education.

The highest mean score ( $M = 3.62$ ,  $SD = 0.64$ ) for the statement "I believe that play-based teaching enhances children's learning and development" signifies that teachers recognize the educational benefits of play. This finding is consistent with Vygotsky's (1978) Social Constructivist Theory, which suggests that children learn best through meaningful social interactions and play (Wood, 2020).

Similarly, a high mean score ( $M = 3.52$ ,  $SD = 0.60$ ) for the statement "I feel confident in implementing play-based strategies because they match my teaching philosophy" suggests that teachers see play-based learning as aligning with their professional beliefs. Research by Pyle and Danniels (2017) indicates that teachers who integrate play into their lessons tend to have a deeper understanding of its benefits.

However, the statement "I think play-based pedagogy is an effective way to engage young learners" had a relatively lower mean ( $M = 3.08$ ,  $SD = 0.91$ ), implying some reservations among teachers regarding engagement. This could be due to concerns about maintaining classroom order or balancing structured learning with play (Pyle et al., 2018).

Interestingly, the statement "I think that traditional teaching methods are more effective than play-based pedagogy for kindergarten learners" recorded a mean of 3.53 ( $SD = 0.67$ ). This indicates that while teachers recognize the benefits of play, many still see value in traditional instructional methods. This finding aligns with Lillard et al. (2013), who suggest that a combination of structured and play-based approaches is optimal for child development.

Additionally, the statement "I believe play-based pedagogy is only effective when supported by a strong understanding of its principles and teaching beliefs" ( $M = 3.51$ ,  $SD = 0.74$ ) highlights the importance of adequate training for teachers. According to

Weisberg et al. (2016), educators who are well-versed in play-based methods are more effective in implementing them successfully.

Overall, the results suggest that while teachers acknowledge the importance of play-based pedagogy, some still prefer traditional teaching approaches. The findings underscore the need for professional development programs to enhance teachers' confidence and understanding of play-based teaching. Providing more training and resources can help bridge the gap between traditional and play-based methods, ensuring a more balanced approach to early childhood education.



## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Overview

This chapter presents the summary, conclusions and recommendations based on the findings of the study.

#### 5.1 Summary

The purpose of this study is to investigate Kindergarten Teachers attitude towards the Use of Play Based pedagogy in Sagnerigu Municipality of the Northern Region.

To achieve these objectives, the study adopted a quantitative research approach, which allowed for the collection of measurable and structured data to provide a broad understanding of teachers' perspectives. A descriptive survey design was utilized to describe the phenomenon systematically, providing a detailed snapshot of the current state of play-based pedagogy in early childhood classrooms within the municipality.

The research involved a total sample size of 159 early childhood educators selected from the Sagnerigu Municipality. To ensure fair representation and reduce bias, the study used the simple random sampling technique. This method gave all educators an equal opportunity to be included in the study, enhancing the reliability and validity of the findings.

Data for the study was collected through a structured questionnaire, which served as the primary instrument. The questionnaire was designed to capture teachers' views on various aspects of play-based pedagogy, including its benefits, challenges, and the extent of its integration into classroom practices.

The data collected was analyzed using descriptive statistical methods, including frequencies, percentages, means, and standard deviations. These statistical tools enabled the researcher to summarize and interpret the data effectively, providing insights into trends, patterns, and overall teacher perspectives. The findings of this study contribute to a deeper understanding of play-based pedagogy and offer practical recommendations for its effective implementation in early childhood education settings.

## **5.2 Key Findings of the Study**

1. The study revealed that the availability of material resources to support play-based pedagogy in Sagnerigu Municipality is limited. Many kindergarten teachers reported insufficient access to age-appropriate play materials, such as educational toys, learning aids, and outdoor play equipment. As a result, teachers often resorted to using locally made or improvised materials, which may not fully align with the pedagogical objectives of play-based learning.
2. The findings revealed that most kindergarten teachers in Sagnerigu Municipality had not received formal training on play-based pedagogy. While some teachers had attended brief workshops or in-service training, the majority reported a lack of specialized training on how to effectively integrate play into the curriculum.
3. The study found that kindergarten teachers in Sagnerigu Municipality face several challenges in implementing play-based pedagogy. Key challenges included overcrowded classrooms, limited time allocated for play activities, and a lack of support from school administration. Additionally, teachers noted that parents and communities often undervalue the importance of play in early childhood education, which further complicates the effective implementation of play-based pedagogy.

The findings revealed that teachers identified several strategies that could enhance the implementation of play-based pedagogy in Sagnerigu Municipality. These strategies included increasing access to educational materials, providing targeted professional development opportunities on play-based learning, and fostering collaboration among teachers to share resources and teaching strategies.

### **5.3 Conclusions**

The following conclusions were drawn from the study;

The study highlighted several critical factors influencing the implementation of play-based pedagogy in Sagnerigu Municipality. The findings revealed that while material resources and teacher training are limited, there is a strong need for more support in these areas. Teachers face various challenges, including overcrowded classrooms, limited time for play, and a lack of community support. However, strategies such as increasing access to resources, providing targeted professional development, and fostering collaboration among teachers were identified as essential for improving the implementation of play-based learning. Addressing these issues will be crucial for enhancing the quality of early childhood education in the municipality.

### **5.4 Recommendations**

These were the recommendations that were outlined for the study

The study recommended that Headteachers work closely with the GES to secure funding and resources for play-based activities, such as toys, educational games, and outdoor play equipment. Additionally, the Ministry of Education should prioritize the allocation of materials specifically designed for play-based learning in the early childhood education sector.

1. It is recommended that the Sagnerigu Education Directorate invest in continuous professional development for kindergarten teachers in the Sagnerigu Municipality, focusing specifically on play-based pedagogy. This can be achieved by organizing workshops, training sessions, and seminars to equip teachers with the knowledge and practical skills needed to implement play-based learning effectively.
2. The study recommended that the Sagnerigu Education Directorate address these challenges by providing a supportive environment that encourages the adoption of play-based teaching methods. This could include reducing class sizes to allow for more individualized attention and play opportunities, offering resources for teachers to create a play-friendly classroom environment, and providing administrative support to help manage time and curriculum demands.
3. The study recommends that the Sagnerigu Education Directorate explore strategies to promote and sustain play-based pedagogy in the Sagnerigu Municipality. This could include integrating play-based learning into the curriculum guidelines, ensuring that it is not viewed as an extra or optional activity but as an essential part of early childhood education.

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## **APPENDIX A**

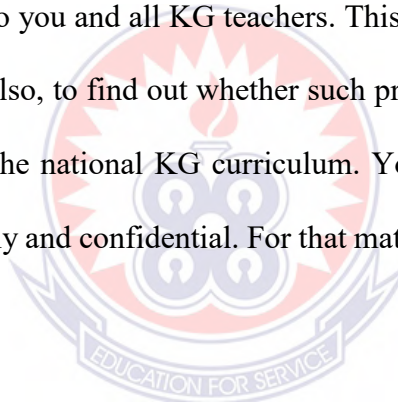
### **INSTRUMENT FOR DATA COLLECTION**

**UNIVERSITY OF EDUCATION, WINNEBA  
FACULTY OF APPLIED BEHAVIOURAL SCIENCES IN EDUCATION**

**DEPARTMENT OF EARLY CHILDHOOD EDUCATION**

**QUESTIONNAIRE FOR KINDERGARTEN TEACHERS**

Dear Participants, I am very grateful to you for your acceptance to participate in this study. The study is to investigate kindergarten teachers' use of play based pedagogy in the public schools at the Sagnerigu Municipality. It is expected that the results of this study will be beneficial to you and all KG teachers. This will help you to reflect on your instructional practices. Also, to find out whether such practices will help achieve the set goals and objectives of the national KG curriculum. Your contributions and responses will be treated very strictly and confidential. For that matter, no name is requested during this exercise.



Thank you so much.

#### **Instruction**

Kindly provide responses for these questions as sincere as you can for the purpose of this study.

**SECTION A**

**Personal Information: Demographics**

*Please, supply the responses as demand by the question.*

1.School ID: \_\_\_\_\_

2.Gender: Male [ ] Female [ ]

3.Class taught: KG 1 [ ] KG 2 [ ]

4.Age range of teacher: 16-20 [ ] 21-25 [ ] 26-29 [ ]  
30-35 [ ] 36 and above [ ]

5. What is your highest academic qualification?

MPhil [ ] M. Ed [ ] Dip. Ed [ ]

B. Ed [ ] Cert.[ ] Any other please specify \_\_\_\_\_

6.Specialized Area:

Early Childhood Education [ ] Basic Education [ ]

Any other, please specify \_\_\_\_\_

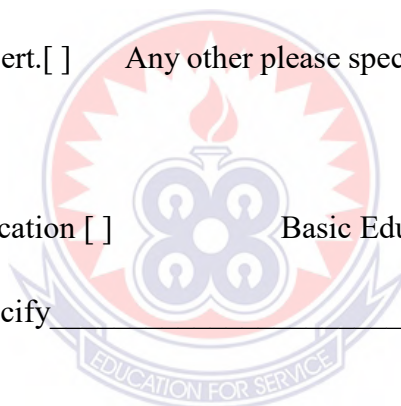
7.Teaching experience: 2-5 [ ] 6-10 [ ] 11-15 [ ]

16-20 [ ] 21 and above [ ] below two [ ]

8. Indicate your position in your school

Head teacher [ ] Early childhood coordinator [ ]

Class teacher [ ] Any other, please specify \_\_\_\_\_



## SECTION B

**Research question 1:** What is the effect of teaching and learning resources on kindergarten teachers' attitudes towards using play-based pedagogy in Sagnerigu Municipality?

**Instruction:** Please indicate your level of agreement with the following statements by ticking the appropriate box.

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
Teaching and learning resources positively influence my willingness to use play-based pedagogy.				
Availability of teaching aids motivates me to implement play-based teaching strategies.				
Lack of resources discourages me from adopting play-based pedagogy in my classroom.				
Sufficient teaching materials make play-based teaching easier to implement.				
My attitude towards play-based pedagogy improves when appropriate resources are available.				

The quality of teaching resources impacts my interest in using play-based teaching methods.				
I feel confident using play-based pedagogy when supported by adequate materials and resources.				
Limited access to teaching and learning resources hinders my adoption of play-based methods.				
I believe that sufficient resources enhance my creativity in integrating play into lessons.				
Resource availability directly affects my attitude towards using play as a teaching approach.				

**(Strongly Agree =4, Agree =3, Disagree= 2 and Strongly Disagree =1).**

**Research question 2:** How do teachers' training levels influence their attitudes towards using play-based pedagogy in Sagnerigu Municipality?

No.	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	Teachers with higher levels of training are more confident in implementing play-based pedagogy.				
2	Training workshops on play-based pedagogy positively influence teachers' attitudes toward its use.				
3	Teachers with limited training feel less prepared to adopt play-based teaching methods.				
4	Advanced training helps teachers understand the benefits of play-based pedagogy for children.				
5	Lack of professional training reduces teachers' willingness to use play-based strategies.				
6	Teachers with specialized training view play-based pedagogy as more effective than traditional methods.				
7	Continuous professional development motivates teachers to use play-based learning activities.				
8	Training levels directly impact teachers' creativity in designing play-based lessons.				
9	Teachers without training in play-based pedagogy feel it is difficult to implement effectively.				

10	Professional training fosters a positive attitude toward integrating play in early childhood education.				
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(Strongly Agree =4, Agree =3, Disagree= 2 and Strongly Disagree =1).

**Research question 3:** What effect does teaching experience have on kindergarten teachers' attitudes towards using play-based pedagogy in Sagnerigu Municipality?

No.	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	Experienced teachers are more confident in using play-based teaching methods.				
2	Teachers with less experience find it challenging to implement play-based pedagogy effectively.				
3	Teaching experience helps in identifying appropriate play activities for learners.				
4	Teachers with more years of experience tend to value the importance of play in child development.				
5	Inexperienced teachers feel that play-based methods take too much time to prepare.				
6	Experienced teachers have better classroom management when using play-based activities.				
7	Teachers with limited experience feel less confident in explaining the benefits of play to parents.				

8	More teaching experience makes it easier to integrate play into the curriculum.				
9	Less experienced teachers often view play as less effective for academic learning.				
10	Experienced teachers encourage the use of play-based pedagogy among their peers.				

(Strongly Agree =4, Agree =3, Disagree= 2 and Strongly Disagree =1).

**RESEARCH QUESTION FOUR:** What role do teaching beliefs play in shaping kindergarten teachers' attitudes towards using play-based pedagogy in Sagnerigu Municipality?

No.	Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1	I believe that play-based teaching enhances children's learning and development.				
2	My personal teaching beliefs align with the principles of play-based pedagogy.				
3	I think play-based pedagogy is an effective way to engage young learners.				
4	I feel confident in implementing play-based strategies because they match my teaching philosophy.				

5	believe play-based teaching is essential for fostering creativity in young children.				
6	My teaching beliefs influence my willingness to adapt play-based methods in the classroom.				
7	I think that traditional teaching methods are more effective than play-based pedagogy for kindergarten learners.				
8	I believe that incorporating play into lessons helps address the diverse needs of kindergarten learners.				
9	My teaching beliefs make it easier for me to understand the benefits of play-based learning.				
10	I believe play-based pedagogy is only effective when supported by a strong understanding of its principles and teaching beliefs.				

**(Strongly Agree =4, Agree =3, Disagree= 2 and Strongly Disagree =1).**

## APPENDIX B

### INTRODUCTORY LETTER



FABSE/DECE/1.1

19<sup>TH</sup> FEBRUARY, 2025

The Director  
Ghana Education Service  
P.O Box ER 377  
Sagnarigu-Northern Region

Dear Sir/ Madam,

#### INTRODUCTORY LETTER

I kindly write to introduce to you Ms. Victoria Oyebisi with index number:8241900051 who is an M. Phil top-up student at the Department of Early Childhood Education, University of Education, Winneba. She is in her final year and has to embark on her thesis on the topic: *"Attitude of Kindergarten Teachers towards the use of Play-based Pedagogy in Sagnarigu Municipality"*.

Ms. Oyebisi is to collect data for her thesis, and I would be most grateful if she could be given the needed assistance.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read "Michael Subbey".

PROF. MICHAEL SUBBEY, (PhD.)  
HEAD OF DEPARTMENT



