

UNIVERSITY OF EDUCATION, WINNEBA

KINDERGARTEN TEACHERS' USE OF PHYSICAL CLASSROOM ENVIRONMENT
FOR LITERACY ACTIVITIES IN NKWANTA NORTH DISTRICT

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DECLARATION

STUDENT'S DECLARATION

I, ABUBAKAR KWAKU KPACHAMGBE, declare that with the exception of the studies cited whose references have been duly acknowledged, this thesis has been the effort of my own original research work conducted. No part of the work has been submitted to any institution for any other degree.

Signature:

Date:

SUPERVISOR'S DECLARATION

I hereby declare that the preparation of this thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University of Education, Winneba

Supervisor: PROF. MICHAEL SUBBEY

Signature:

Date:.....

DEDICATION

First and foremost, my ultimate dedication goes to the Almighty Allah for his mercy, and guidance granted to me. I also dedicate this work to my lovely wife and children, Felicia Akua Bijimoe and Tasnim Kpachamgbe, Ridwan Kpachamgbe, Abdul Wadud Kpachamgbe and Nejima Kpachamgbe for their support in prayer and continue encouragement in every endeavour.

Additionally, I dedicate this thesis to Alhaji Saibu Karim, his Wife Hajia Ramatu Saibu, and the children for their support always given to me for the successful attainment of this qualification.

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LIST OF ACRONYMS

SPSS	Statistical Package for Service Solution
ISTOF	International System for Teacher Observation and Feedback
EGRA	Early Grade Reading Assessment
EGMA	Early Grade Mathematics Assessment
SSME	Snapshot of Schools Management Effectiveness
BECE	Basic Education Certificate Examination
PTA	Parent-Teacher Association
WASSCE	West African Secondary School Certificate Examination
SPSS	Statistical Package for Social Sciences
TLR	Teacher-Learner Ratio

ABSTRACT

This study assessed the kindergarten teachers' use of physical classroom for literacy activities in Nkwanta North district. The study adopted a descriptive survey research design. A simple random sampling technique was used to select the kindergarten teachers. 140 was the sample size for the study. Questionnaire was used for data collection. The findings of the study revealed that, the classroom space is sufficiently ample for learners to comfortably engage in literacy activities. Again, teachers effectively use the classroom layout to organize literacy activities. This indicates that most respondents believe the classroom arrangement supports effective literacy instruction. Furthermore, a notable challenge is limited classroom space, which restricts the implementation of literacy activities. The study concluded that physical classroom provides a favorable atmosphere for learning and enables learners to enhance their literacy learning activities. The study recommends that, schools should explore more efficient classroom layouts and furniture arrangements to maximize the available space and ensure that all learners can comfortably engage in literacy activities. School administrators and policymakers should prioritize improvements in physical classroom infrastructure. Allocating resources towards enhancing classroom environments through improved ventilation, lighting, and the provision of educational materials will be crucial in overcoming the challenges identified in the study.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Literacy development in early childhood is fundamentally influenced by the physical environment in which children learn. The classroom environment, particularly in kindergarten, plays a critical role in shaping children's literacy experiences, as it serves as both a learning space and a teaching tool. Globally, and increasingly in sub-Saharan Africa, educational researchers and policymakers have recognized the importance of providing stimulating and supportive environments for young learners, especially in foundational stages where basic literacy skills are cultivated (Bodrova & Leong, 2015).

A well-organized physical classroom environment provides learners with opportunities to interact with print, engage in oral language experiences, and practice emerging literacy skills. The environment includes not only physical infrastructure such as lighting, ventilation, space, and furniture, but also learning materials such as books, charts, letter cards, writing tools, and thematic learning centers. In the early years, such resources are critical for fostering children's understanding of language, print concepts, phonological awareness, and storytelling (Neuman & Roskos, 2007). When children are consistently exposed to these elements in their classroom environment, they are more likely to develop strong literacy foundations that support lifelong learning.

In Ghana, the Ministry of Education's Early Childhood Care and Development

(ECCD) policy highlights the importance of safe, healthy, and literacy-rich environments in early childhood centers (Ministry of Education, 2019). Despite these policy intentions, many public kindergarten classrooms, especially in rural districts like Nkwanta North, are characterized by overcrowding, inadequate resources, and poorly designed spaces that hinder literacy instruction. Physical classroom conditions vary widely between urban and rural areas, and these disparities have implications for the quality of education provided to young learners. In many rural communities, kindergarten teachers often have to improvise due to the absence of age-appropriate learning materials and well-structured classrooms (UNICEF Ghana, 2020).

The physical classroom environment acts as a silent partner in the instructional process, and its conduciveness significantly affects both teaching and learning outcomes. In kindergartens where classrooms are poorly lit, inadequately ventilated, and lacking child-friendly furniture, young children may struggle to focus, interact, and participate in literacy tasks (Maxwell, 2016). For instance, if the classroom lacks designated reading corners or writing centers, children may have limited exposure to books and print media. Similarly, when walls are bare or sparsely decorated, there is minimal visual stimulation to support language development. Research indicates that such conditions negatively impact children's interest and engagement in literacy activities, ultimately affecting their reading and writing skills (Mashburn et al., 2008).

Teachers play a crucial role in utilizing and adapting the physical environment to facilitate literacy instruction. Their capacity to design print-rich, child-centered classrooms enables them to engage learners in meaningful literacy tasks. This includes organizing literacy corners, displaying children's writing,

labeling objects in the classroom, and integrating storytelling and reading into daily routines (Epstein, 2014). However, in many cases, kindergarten teachers in under-resourced districts lack adequate training or support to create such environments. Limited professional development opportunities and insufficient funding further constrain their ability to use the classroom environment to its full potential (Ametepe & Anastasiou, 2015).

In Ghana's northern and rural districts, such as Nkwanta North, the challenge of creating conducive classroom environments is compounded by broader socio-economic factors. Many schools operate in temporary structures, and in some cases, classrooms are shared by multiple classes or used as multi-grade spaces. Such arrangements often prevent teachers from creating personalized or child-friendly learning environments. The Ghana Education Service (GES) has acknowledged these disparities and called for more investment in early childhood infrastructure and teacher support (GES, 2020). Yet, implementation remains uneven, leaving many rural kindergartens without the necessary physical conditions for effective literacy instruction.

Teachers' ability to utilize available classroom resources creatively also determines the effectiveness of literacy teaching. In some schools, despite infrastructural challenges, teachers demonstrate innovation by using locally available materials such as empty cartons, stones, sticks, and locally made books to support literacy learning. These practices reflect the resilience and commitment of teachers who strive to ensure children receive quality instruction despite constraints (Curtis & Carter, 2015). However, such efforts often go undocumented and unsupported, leaving many teachers demotivated over time. The lack of recognition and professional learning communities that

support idea-sharing further limits the replication of effective practices across schools in the district.

Another issue that affects the use of the classroom environment for literacy activities is class size. Overcrowding remains a persistent challenge in many public kindergartens in rural Ghana. A class with over 50 children and a single teacher may find it difficult to maintain order, let alone organize effective small group literacy sessions or individual reading activities. Large class sizes diminish the teacher's ability to offer differentiated instruction or manage learning centers effectively, thereby weakening the impact of the physical environment (Opoku-Asare et al., 2014).

In addition to overcrowding, the lack of teaching assistants in many rural schools places an extra burden on the teacher. Without support staff, teachers find it challenging to manage classroom transitions, supervise literacy centers, and provide one-on-one guidance during reading and writing sessions. These constraints hinder teachers from maximizing the use of physical space and limit children's exposure to interactive literacy experiences (Dodge, Colker, & Heroman, 2016).

Furthermore, the use of the physical classroom environment is influenced by the level of administrative and community support. In communities where school management committees and parent-teacher associations are active, there is often greater investment in improving school infrastructure and learning materials. Such involvement has been linked to better classroom environments and enhanced literacy outcomes in early childhood education (UNESCO, 2015). However, in Nkwanta North District, community support may

be limited due to economic challenges or low awareness of the importance of early literacy development. Strengthening these partnerships can lead to improved classroom environments and more effective use of physical spaces for literacy instruction.

Another factor influencing teachers' use of the classroom environment is the availability of in-service training and mentorship. Teachers who have access to ongoing professional development are more likely to innovate, rearrange their classrooms, and introduce new literacy materials into their teaching. Training programs that focus on creating print-rich environments, using space efficiently, and promoting emergent literacy through play can empower teachers to make better use of their classrooms (Neuman & Roskos, 2007). However, in districts such as Nkwanta North, such professional learning opportunities are not consistently available. Teachers often work in isolation without access to workshops, coaching, or peer networks, leading to stagnation in teaching strategies and classroom design.

Moreover, environmental conditions such as poor ventilation, dust, and excessive heat further disrupt learning and limit how teachers can organize classroom activities. Many schools lack ceiling fans or adequate windows, making classrooms uncomfortable during hot seasons. These conditions not only affect children's health and concentration but also limit the use of certain teaching methods such as reading circles or group storytelling that require physical proximity and interaction (Maxwell, 2016). Teachers, aware of these limitations, often avoid using the classroom environment extensively for literacy activities, thereby reducing opportunities for active engagement.

It is also important to consider the psychological and social dimensions of the physical classroom environment. A welcoming, colorful, and organized classroom fosters a sense of belonging and motivates children to learn. Classrooms that reflect children's work, celebrate their achievements, and incorporate their culture and language make them feel valued and included in the learning process. In contrast, dull or neglected classrooms may lead to apathy, low self-esteem, and reduced motivation among learners. Teachers, therefore, have a responsibility not only to arrange furniture or display charts but also to create emotionally supportive environments that enhance literacy acquisition (Pianta, La Paro, & Hamre, 2008).

Finally, the issue of monitoring and evaluation arises when considering how the physical environment supports literacy activities. Schools and education authorities need to develop tools to assess the quality of classroom environments and how they contribute to literacy outcomes. These tools can guide school heads, teachers, and education officers in identifying areas for improvement and mobilizing resources for classroom enhancement. Systematic assessment of classroom environments can also inform teacher appraisals, curriculum delivery, and educational policy formulation, ensuring that every child has access to a literacy-rich, supportive learning space (MoE, 2019).

1.2 Statement of the Problem

The environment in which young children learn has a profound impact on their academic development, particularly in the area of literacy. The organization, spatial arrangement, and instructional resources present in the classroom collectively create a setting that either supports or hinders children's ability to

acquire foundational literacy skills. A thoughtfully designed and well-structured physical classroom environment is a critical component of effective early childhood education. It offers young learners opportunities to engage with language through reading, writing, listening, and speaking activities that are embedded within the daily structure of the classroom (Barrett et al., 2019).

In the early years of schooling, the classroom serves as more than just a physical space, it becomes a dynamic environment that can promote curiosity, interaction, and exploration. The way a classroom is organized, including the use of display boards, reading corners, labeled materials, and interactive learning centers, significantly influences how children experience literacy (Maxwell et al., 2020). Research has shown that when classrooms are purposefully designed to support early literacy, learners show improved engagement, enhanced comprehension, and greater motivation to read and write (Neuman & Roskos, 2021). These benefits are particularly critical during the kindergarten years, where foundational skills are established that shape future academic success.

Despite global recognition of the importance of classroom environments in early learning, many developing countries continue to face challenges in creating spaces that are conducive to literacy development. In Ghana, the situation is no different. Many public kindergarten classrooms, especially in rural districts such as Nkwanta North, lack the basic facilities and resources needed to support literacy instruction. Overcrowded classrooms, inadequate furniture, poor lighting, and limited access to age-appropriate books and print materials characterize the learning environment in many of these schools (Asare et al., 2022). These conditions not only affect learners' physical comfort

but also limit their opportunities to interact with texts and develop essential literacy skills.

The importance of creating literacy-rich classroom environments has been underscored in numerous studies. A literacy-rich environment refers to a setting where learners are consistently exposed to various forms of written and spoken language. This includes having books, charts, posters, labels, writing tools, and storytelling areas readily available and easily accessible to children. Such an environment helps learners develop print awareness, vocabulary, phonemic awareness, and narrative skills, all of which are fundamental components of early literacy (Justice et al., 2008). The absence of these materials, which is common in resource-constrained settings, has been shown to correlate with lower literacy achievement among learners (Neuman & Celano, 2012).

Teachers play a central role in shaping the physical classroom environment. Their ability to plan and organize the space to support learning outcomes is essential to effective instruction. In environments where material resources are scarce, teachers often demonstrate innovation by using locally available materials to develop learning aids and construct makeshift literacy centers (UNICEF Ghana, 2020). For example, in rural communities, teachers may use cardboard, stones, leaves, or sticks to teach letters, sounds, or storytelling. While these strategies reflect teacher resourcefulness, they also highlight the systemic challenges faced by educators who lack institutional support for quality classroom infrastructure and resources (Ampadu et al., 2021).

In the Nkwanta North District of Ghana, these challenges are particularly

pressing. Many kindergartens in the district operate in dilapidated structures with limited access to water, electricity, or proper ventilation. Furniture is often inadequate, and in some cases, learners sit on mats or bare floors during instruction. In such conditions, the ability of teachers to create organized and literacy-rich environments is significantly constrained (Ghana Education Service [GES], 2022). The lack of proper storage, display areas, and reading corners makes it difficult for teachers to introduce interactive literacy activities such as shared reading, writing practice, or phonics games. Consequently, learners in these environments may have limited exposure to quality literacy experiences, putting them at a disadvantage compared to their peers in better-resourced settings.

Empirical studies suggest that early exposure to print-rich environments significantly enhances children's cognitive and language development (Duke & Block, 2012). When children are surrounded by visible print and are encouraged to engage with texts in meaningful ways, their motivation to read increases, and they develop a deeper understanding of language use. These interactions, when consistently reinforced, build the foundational skills necessary for independent reading and comprehension. Unfortunately, in settings like Nkwanta North, the limitations of the physical classroom environment restrict such interactions, potentially leading to gaps in literacy development that persist throughout a child's educational journey (Barrett et al., 2019).

The organization of the classroom also influences teaching strategies. A well-structured classroom enables teachers to implement small group instruction, literacy stations, and differentiated learning activities that cater to the varying needs of learners. This kind of flexibility is essential in kindergarten settings,

where learners develop at different paces and require diverse forms of support. However, in overcrowded and poorly designed classrooms, teachers may be forced to adopt whole-class instruction, often using rote methods that do not adequately promote literacy development (Ametepeee & Anastasiou, 2015). The lack of space, instructional materials, and visual stimuli not only limits teaching strategies but also reduces learner engagement and participation.

Moreover, the psychological and emotional effects of the physical learning environment should not be underestimated. Classrooms that are welcoming, organized, and filled with stimulating materials promote a sense of security and belonging among young learners. Such environments support positive attitudes toward learning and encourage exploration and risk-taking, which are essential for literacy growth (Epstein, 2014). Conversely, environments that are chaotic, bare, or overcrowded may create anxiety, discourage interaction, and hinder the development of confidence in reading and writing tasks.

The role of government policy and stakeholder involvement is critical in addressing these challenges. The Ghana Education Service, through the Early Childhood Education (ECE) policy, has emphasized the need to improve classroom infrastructure and provide resources for kindergarten education (MoE, 2019). However, the implementation of these policies often falls short, particularly in rural districts where funding, supervision, and accountability mechanisms are weak. Community involvement, through school management committees and local NGOs, has shown promise in improving infrastructure and providing learning materials, but these efforts are often limited in scale and sustainability (UNESCO, 2015).

Furthermore, professional development opportunities for teachers are essential for improving their ability to use the classroom environment effectively. Training programs that focus on early literacy strategies, classroom organization, and material development can equip teachers with the skills needed to transform even modest spaces into effective literacy environments. Studies have shown that when teachers receive support and training, they are more likely to implement child-centered practices and make purposeful use of the physical space (Dodge et al., 2016). In Ghana, however, many kindergarten teachers have not received specialized training in early childhood education and rely on general teaching methods that may not be suitable for young learners (Asare et al., 2022).

In many cases, teachers themselves have identified the need for additional support in using the physical environment to enhance literacy. Interviews and observational studies in similar contexts have revealed that teachers desire more training on classroom arrangement, visual stimulation, and integration of literacy activities across learning centers (Opoku-Asare et al., 2014). These findings suggest that empowering teachers through capacity-building programs and providing them with relevant teaching aids can significantly improve the learning environment and, by extension, literacy outcomes for kindergarten learners.

Despite the existing body of research highlighting the importance of the physical environment in early literacy development, there is a noticeable gap in localized studies that explore how Ghanaian kindergarten teachers utilize their classrooms specifically for literacy activities. Most studies focus broadly on teaching and learning challenges without delving into the use of space,

materials, and classroom arrangement as instructional tools. Understanding how teachers in a specific rural district such as Nkwanta North use and adapt their classrooms for literacy can offer valuable insights into the realities on the ground and inform context-specific interventions that address both infrastructural and pedagogical gaps (Neuman & Roskos, 2021).

1.3 Objectives of the Study

The objective of this study are to;

1. determine the conducive nature of the physical classroom environments in selected kindergarten schools towards literacy activities in Nkwanta North district.
2. evaluate how kindergarten teachers utilize the physical classroom environment to facilitate literacy activities in Nkwanta North district.
3. identify the challenges kindergarten teachers face in using the physical classroom environment for literacy activities in Nkwanta North district.

1.4 Research Questions

This study was guided by the following research questions;

1. How conducive is the physical classroom environments of the selected kindergarten schools towards literacy activities in Nkwanta North district?
2. How do kindergarten teachers utilize the physical classroom environment to facilitate literacy activities in Nkwanta North district?
3. What challenges do kindergarten teachers face in using the physical

classroom environment for literacy activities in Nkwanta North district?

1.5 Significance of the study

The findings of the study would guide school administration to reflect upon the various physical classroom factors that influence the teaching and learning of literacy skills in kindergarten schools.

It is hoped that the findings of this study would assist the Ministry of Education and Ghana as a whole in recognizing that physical classroom environment has a critical role to play which has a direct influence on learners' performance. This study would also help learners to know the importance of developing their language skills, including the ability to write and read from an early age and also the impact of a conducive physical classroom environment. More so, teachers who teach in kindergarten schools would also find this study useful by increasing their awareness and understanding of some of the issues within physical classroom environment and how it could undermine or promote learners' performance in literacy learning and possible intervention of these issues.

Furthermore, it is also hoped that the results would be useful to class teachers, who are the immediate implementers of literacy practices in schools. The findings would add to the body of knowledge on the importance of physical classroom environment in promoting literacy learning.

1.6 Delimitation of the Study

The aim of this study was to investigate how kindergarten teachers use physical classroom environment to promote literacy learning in kindergarten schools in Nkwanta North district, Ghana. The study was narrowed to two public and two

private kindergarten schools in Nkwanta North district in order to obtain well-grounded findings which would be utilized, effectively. The study was also delimited to physical classroom environment which was the main variable.

1.7 Organization of the Study

The study is organized into five chapters. Chapter One comprises the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitation, limitations, and organisation of the study. Chapter two reviews related literature on the topic under study. Chapter three presents the methodology for the study which includes the research paradigm, research approach research design, population, sample and sampling procedures, data collection instrument, trustworthiness of data, data collection procedures, data analysis procedures, and ethical considerations. Chapter four deals with data presentation, analysis, and discussion, whereas chapter five deals with summary, conclusion, and recommendations made.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter reviewed various studies that have been conducted in relation to the concern of the current study. This study covered the following sub-headings; theoretical framework, meaning of physical classroom environment, overview of literacy learning, the conducive nature of physical classroom environments, factors that affects literacy learning achievements, strategies that improves literacy learning in schools, empirical review, conceptual framework and summary of chapter

2.1 Theoretical Framework

Ecological Systems Theory (Bronfenbrenner, 1979)

Bronfenbrenner's Ecological Systems Theory offers a broad and insightful framework for examining how different environmental layers shape a child's development. Originally developed in 1979, this theory suggests that children's growth and learning are influenced not just by their immediate surroundings but also by a complex set of systems that operate at varying levels of proximity

to the child. Each system interrelates and contributes uniquely to shaping developmental outcomes. When applied to the context of early childhood education, particularly how kindergarten teachers design and use the physical classroom environment for literacy activities, this theory becomes especially useful.

At the core of Bronfenbrenner's model is the microsystem, which includes the settings where children engage in direct and face-to-face interactions. In a kindergarten context, the classroom itself is a central component of the microsystem. It is within this space that learners interact with teachers, classmates, educational materials, and the physical layout of the room. The organization of furniture, accessibility of literacy materials such as books, alphabet charts, flashcards, and word walls, and the inclusion of literacy corners or storytelling spaces all contribute significantly to shaping children's experiences with reading and writing (Bodrova & Leong, 2015). The way a teacher arranges and uses the physical environment can either enhance or hinder these experiences. A well-organized, print-rich, and stimulating classroom supports active engagement, while a disorganized or resource-scarce environment may lead to reduced motivation and limited literacy development.

The teacher-learner interactions that take place in this immediate setting are also crucial. Teachers who intentionally use visual displays, storytelling areas, and interactive reading centers help reinforce children's literacy skills and foster language acquisition. These daily, repeated engagements contribute to learners' cognitive, social, and emotional development. In this regard, the microsystem demonstrates how immediate environmental conditions,

including the design and utilization of classroom space, directly impact literacy learning outcomes.

Moving outward, the mesosystem represents the linkages between different microsystems in a child's life. In the context of kindergarten literacy, the relationship between the school and the home is particularly significant. For example, when teachers communicate regularly with parents about the importance of reading at home, or when parents are invited to participate in classroom reading activities, the connection between home and school environments becomes stronger (Epstein, 2014). These connections reinforce the literacy skills being taught at school and help create a consistent learning experience for the child. In environments where such collaboration exists, children tend to show more enthusiasm for literacy tasks and make greater academic progress.

Moreover, the mesosystem highlights the importance of consistency and synergy across settings. If a child's home environment values literacy and supports reading through access to books, storytelling, and parental involvement, and the school environment reflects similar values through well-planned literacy activities and a supportive classroom environment, the child is more likely to experience positive literacy development. On the contrary, when there is a disconnect between these environments—for instance, when literacy is emphasized at school but not supported at home—children may struggle to progress.

The exosystem involves contexts that do not directly include the child but still affect their development. These include school administrative decisions, district

education policies, or community-based programs that influence the resources and support available to kindergarten classrooms. For example, if educational policymakers or district officials allocate funding for classroom materials or teacher training on literacy instruction, it can significantly enhance the physical environment and teaching quality, even though the children themselves are not directly engaged with these external systems. On the other hand, limited budget allocations, inadequate teacher support, or weak community engagement can indirectly hinder the quality of literacy experiences available to children.

Community resources such as libraries, early childhood resource centers, or parent support programs also fall within the exosystem. If a community supports early literacy through initiatives like reading campaigns or parent education workshops, it creates a more enabling environment for both teachers and learners. Kindergarten teachers in well-supported communities are better positioned to utilize diverse strategies and materials in the classroom to foster literacy, even when faced with individual challenges.

At a broader level, the macrosystem encompasses cultural values, societal norms, educational ideologies, and national policy frameworks that shape how literacy and early childhood education are viewed. In the Ghanaian context, for instance, national education policies that promote early reading and the integration of play-based approaches into kindergarten curricula demonstrate the macrosystem's influence (Ministry of Education, 2019). Cultural attitudes towards literacy, such as the value placed on storytelling, local language usage, and oral traditions, also shape how literacy activities are implemented in classrooms. Teachers are often influenced by these societal norms and

expectations, which guide the extent to which they prioritize literacy, the language of instruction they choose, and how they arrange classroom spaces to support learning.

The macrosystem also includes international frameworks and influences, such as Sustainable Development Goal 4, which emphasizes inclusive and equitable quality education. These broader agendas shape national educational goals, which in turn influence how resources are distributed and how early literacy is integrated into teacher training and classroom practice. Therefore, the values and policies embedded in the macrosystem have a cascading effect on how teachers structure the classroom environment and deliver literacy instruction.

Finally, Bronfenbrenner introduces the chronosystem, which encompasses the dimension of time and how changes and transitions over time influence child development. This includes both life events and historical or systemic changes. For kindergarten learners, transitions such as moving from home to school, changes in school leadership, or curriculum reforms can all impact literacy learning. Teachers' adaptation to evolving literacy curricula or changes in classroom infrastructure also fall under this system. For instance, a school may receive a grant to improve classroom facilities or supply new literacy materials, and such an event may enhance the learning environment significantly. Alternatively, a change in school leadership that deprioritizes early literacy may result in decreased support for teachers' classroom practices.

Teachers' own professional development over time also fits within the chronosystem. As teachers gain experience and attend workshops or in-service training, their capacity to organize and utilize classroom environments for

literacy activities improves. These professional growth trajectories influence the way they engage children and manage the classroom space for effective learning.

In summary, Bronfenbrenner's Ecological Systems Theory provides a holistic framework for examining how multiple layers of influence affect children's literacy development in kindergarten settings. From the immediate classroom interactions in the microsystem to the broader societal and policy contexts of the macrosystem and chronosystem, each layer plays a role in shaping the environment in which literacy instruction occurs. Understanding these interrelated systems allows educators, policymakers, and researchers to better identify opportunities and challenges in creating supportive classroom environments that enhance literacy learning among young children.

Socio-Cultural Theory (Vygotsky, 1978)

Lev Vygotsky's Socio-Cultural Theory of cognitive development offers a valuable lens through which the role of the physical classroom environment in supporting literacy activities can be understood. The theory asserts that cognitive growth does not occur in isolation but is fundamentally shaped by social interactions and the cultural tools present in a child's environment (Vygotsky, 1978). Rather than viewing learning as a solitary process, Vygotsky emphasized the importance of the interactions that occur between children and more knowledgeable individuals, such as teachers, caregivers, or peers, in facilitating the acquisition of knowledge. In early childhood education settings like kindergartens, these social interactions are key drivers of literacy development, and the classroom environment serves as the physical context in which such learning experiences unfold.

Central to Vygotsky's theory is the notion that learning precedes development, meaning that through engagement in meaningful social activities, children acquire the cognitive tools needed for independent thinking and problem-solving. This idea supports the view that the classroom environment should be intentionally designed to promote guided interactions between children and their teachers or peers. The classroom, therefore, becomes more than a physical space; it acts as a dynamic learning ecosystem that enables the transfer of cultural knowledge, especially in the area of language and literacy.

In kindergarten classrooms, teachers play a critical role as facilitators of learning by creating environments that are rich in social and cultural experiences. This includes organizing the physical space in ways that encourage interaction, exploration, and shared meaning-making. Vygotsky introduced the concept of the "More Knowledgeable Other" (MKO), which refers to someone who possesses a higher level of understanding or skill in a particular domain. In the classroom, the teacher functions as the MKO by guiding learners through literacy tasks using culturally relevant materials and methods. These may include storytelling sessions, guided reading, song and rhyme recitation, and shared writing activities, all of which are enhanced by how the classroom is arranged and resourced.

Another cornerstone of Vygotsky's theory is the concept of the Zone of Proximal Development (ZPD), which refers to the difference between what a child can do independently and what they can achieve with guidance and support. Effective literacy instruction within the classroom environment often hinges on the teacher's ability to recognize each child's ZPD and tailor their instruction accordingly. This is where the idea of scaffolding becomes crucial.

Scaffolding involves providing temporary support that enables a child to perform a task they would not be able to complete alone. As the child's competence grows, the support is gradually removed, promoting autonomy and confidence.

The physical classroom environment, when designed intentionally, can serve as a form of scaffolding. For example, literacy corners stocked with age-appropriate books, writing materials, alphabet charts, and word walls provide children with access to tools that support independent and guided learning. These physical structures and materials act as cultural tools that embody language and literacy practices valued by society. According to Vygotsky, cultural tools—both tangible and symbolic—play a central role in shaping thought and communication. In literacy development, these tools include printed text, oral language, visual symbols, and instructional materials that support reading and writing.

Interactive displays and classroom visuals, such as labeled objects, storytelling charts, and illustrated alphabets, not only decorate the room but also serve instructional purposes. They provide reference points that children can use during literacy tasks, thus reinforcing vocabulary development, word recognition, and print awareness. When these materials are displayed at children's eye level and integrated into daily activities, they promote self-directed exploration and learning—key goals of the socio-cultural approach to education.

Furthermore, the physical arrangement of the classroom, including how furniture is placed, also contributes to the promotion of social interaction.

Arranging desks or tables in small groups encourages collaboration, peer learning, and dialogue, all of which are emphasized in Vygotsky's theory. Social interactions among peers are critical because they provide opportunities for children to express themselves, ask questions, and learn from others' perspectives. In literacy activities, peer collaboration might include paired reading, shared storytelling, or working together on phonics games. Such interactions stimulate language use, broaden vocabulary, and deepen understanding.

Classroom routines and learning centers are also tools that support the internalization of literacy practices. Learning centers designed for role play, reading, writing, and letter recognition allow children to engage in structured but flexible literacy tasks. These centers give learners autonomy to choose activities, which supports motivation and personal engagement. From a Vygotskian perspective, these self-initiated tasks still fall within the ZPD when children use the tools and supports available in the environment to extend their learning.

Importantly, Vygotsky's theory underscores the influence of cultural context on learning. In Ghanaian kindergarten classrooms, incorporating local stories, languages, and cultural practices into literacy activities not only makes learning more meaningful but also aligns with Vygotsky's emphasis on culturally responsive teaching. Classroom materials should reflect the learners' lived experiences, using familiar symbols, names, and narratives that resonate with the children's backgrounds. This cultural grounding ensures that the literacy environment is not only educational but also affirming of children's identities.

Moreover, the teacher's role in modeling language and literacy practices cannot be overstated. Through reading aloud, questioning, and dialogue, teachers expose learners to the rhythms, structures, and functions of language. These social exchanges allow children to observe expert behavior, participate with support, and eventually internalize the knowledge and skills being modeled. The classroom, in this sense, acts as a social and cognitive apprenticeship where literacy skills are developed through interaction and participation.

In resource-constrained settings like many areas in the Nkwanta North District, creating such enriched environments can be challenging due to limited materials and infrastructure. However, even with minimal resources, teachers can apply Vygotskian principles by maximizing social interactions, adapting local materials into literacy tools, and structuring routines that promote collaborative learning. For instance, using locally made storybooks, labeling classroom objects in both English and local languages, and organizing group-based literacy tasks can provide the necessary scaffolding for young learners.

In conclusion, Vygotsky's Socio-Cultural Theory provides a powerful framework for understanding how the physical classroom environment supports literacy development in kindergarten settings. The theory emphasizes that learning is a socially mediated and culturally grounded process. Therefore, kindergarten classrooms should be designed not just as places to sit and listen but as active, interactive spaces filled with meaningful materials, supportive interactions, and opportunities for children to co-construct literacy knowledge with peers and teachers. By applying Vygotsky's concepts such as the ZPD, scaffolding, and cultural tools, educators can create physical environments that promote effective and equitable literacy learning, even in contexts with limited

resources.

Multiple Intelligences Theory (Gardner, 1983)

Howard Gardner's Theory of Multiple Intelligences, introduced in 1983, revolutionized traditional views of intelligence by proposing that human intelligence is not a single, general ability measurable by IQ tests, but rather a collection of distinct intelligences that individuals possess in varying degrees. These intelligences include, but are not limited to, linguistic, spatial, logical-mathematical, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic intelligences (Gardner, 1983). This theory is especially significant in educational settings because it emphasizes that students learn in different ways and possess different strengths. It offers a more inclusive framework for designing teaching strategies, assessments, and learning environments particularly in early childhood education where developmental diversity is more pronounced.

In the context of kindergarten education, Gardner's theory provides a valuable lens through which educators can understand and respond to the individual learning needs of young children. The physical classroom environment, as a key element in the teaching and learning process, plays a crucial role in addressing these multiple intelligences. A thoughtfully organized and resource-rich environment can support various intelligences by providing materials, spaces, and activities that align with children's unique ways of learning. This creates a more engaging, inclusive, and effective learning experience for all learners.

Linguistic intelligence, which involves sensitivity to spoken and written language, is foundational to literacy learning. Children with strong linguistic intelligence enjoy reading, storytelling, writing, and verbal expression. To

support these learners, the physical classroom environment should include features such as a well-stocked library corner, a storytelling area with puppets or props, writing centers with a variety of writing materials, and wall displays with alphabets, sight words, and students' written work. By integrating these elements into the classroom design, teachers create opportunities for children to interact with language in meaningful ways, thus reinforcing vocabulary development, phonemic awareness, and early writing skills (Armstrong, 2009).

In addition to linguistic intelligence, spatial intelligence—the ability to visualize and manipulate objects and spaces is critical in the development of early literacy skills such as letter recognition, word formation, and comprehension. Children with high spatial intelligence often respond well to visual cues and graphic representations. Therefore, a classroom that incorporates visual aids such as labeled objects, colorful posters, story maps, pictographs, and concept charts helps such learners to make sense of abstract language concepts. Visual storytelling, picture books, and drawing activities can also be powerful tools for these learners. When teachers use classroom walls, bulletin boards, and floor space to display visual materials, they help spatially inclined children to better process and retain literacy content (Curtis & Carter, 2015).

Bodily-kinesthetic intelligence, which involves using the body effectively for expression and problem-solving, is another critical area to consider in kindergarten classrooms. Young children, in general, learn best through movement and tactile engagement. For learners who excel in this intelligence, sitting for long periods or only listening to verbal instruction can limit their engagement and understanding. The physical environment must, therefore, include spaces for movement-based learning—such as carpet areas for action

songs, movement games tied to vocabulary development, and hands-on literacy centers with manipulative like letter blocks, sand trays for tracing letters, or role-play areas. Incorporating kinesthetic activities into literacy instruction enables these learners to internalize language through physical experience, thereby improving memory and motivation (Dodge et al., 2016).

Beyond these three intelligences, teachers should also consider other domains such as musical intelligence, which can enhance literacy through rhythm, rhymes, and songs. Music-rich environments with instruments, song charts, and audio resources support learners who connect with language through sound patterns. Interpersonal intelligence—the capacity to understand and interact effectively with others—can be nurtured in environments that support collaborative learning. Literacy stations that allow for paired reading, group storytelling, or shared writing tasks encourage social interaction and language development. Intrapersonal intelligence, or self-awareness, may be addressed through quiet areas where children can engage in independent reading or journaling.

By organizing the classroom environment to address multiple intelligences, teachers provide children with multiple entry points into literacy learning. This inclusive approach not only supports academic development but also promotes positive attitudes towards learning by allowing children to use their strengths. Gardner (1983) emphasizes that when instruction aligns with a learner's preferred intelligence, learning becomes more natural, enjoyable, and effective. This is particularly relevant in early childhood education, where children are forming their first impressions of school and literacy.

Implementing a multiple intelligences approach in the classroom also supports differentiated instruction, a teaching method that adjusts content, process, and learning environment based on learners' needs and strengths. When physical space is used flexibly, for example, by setting up literacy centers that target different intelligences children are empowered to choose activities that resonate with their learning style. For instance, while one child may engage in phonics games with magnetic letters, another might choose to act out a story with props or create an illustration of a poem. This flexibility reinforces autonomy, creativity, and confidence in literacy learning (Tomlinson, 2014).

Moreover, a classroom designed with multiple intelligences in mind promotes equity in literacy education. It challenges the traditional one-size-fits-all model and recognizes that children from different cultural, linguistic, and cognitive backgrounds bring diverse experiences to the learning process. By validating different ways of knowing and learning, teachers reduce bias and ensure that all learners have access to literacy in a way that makes sense to them. This is particularly important in multilingual and multicultural settings like those in many Ghanaian kindergartens, where learners may not have equal exposure to formal English literacy before school entry (UNESCO, 2015).

In practical terms, designing a classroom to accommodate multiple intelligences requires intentional planning, resourcefulness, and flexibility. Teachers must first observe and understand the learning profiles of their students and then organize physical spaces accordingly. Rotational centers, learning corners, visual schedules, interactive bulletin boards, and tactile resources are just a few strategies that support this approach. Even in resource-constrained settings, teachers can create low-cost learning materials and use

locally available items to support different intelligences. Community involvement and peer collaboration can also enhance the process of transforming classroom environments to be more inclusive and stimulating.

In conclusion, Gardner's Multiple Intelligences Theory offers a powerful framework for understanding how to design physical classroom environments that support diverse learners, especially in the foundational stage of literacy acquisition. By recognizing that children learn in varied ways linguistically, visually, physically, musically, socially, and reflectively teachers can create dynamic and engaging classrooms that promote literacy development for all. In kindergarten settings, where developmental differences are especially pronounced, applying this theory through the physical design and arrangement of the learning environment ensures that every child has an opportunity to thrive academically and emotionally. A classroom that reflects the principles of multiple intelligences not only supports literacy but also nurtures creativity, confidence, and lifelong learning.

2.3 Meaning of Physical Classroom Environment

The physical classroom environment refers to all the tangible, structural, and spatial elements within a classroom that directly or indirectly influence teaching and learning. It includes aspects such as the size of the classroom, lighting conditions, room temperature, ventilation, the state of the floors (whether concrete or carpeted), and the arrangement of furniture and equipment (Rivkin, 2015). In broader terms, it refers to the physical space where teachers and learners interact, including elements like windows, doors, walls, ceilings, and various tools and resources used for instruction. These tools

can include desks, chairs, boards (chalkboards or whiteboards), rugs, display boards, counters, storage units, technological devices such as computers, and many other items that support teaching and learning activities (Fisher, 2018).

A well-organized physical environment can have a significant influence on learners' academic performance, motivation, and general classroom experience. When learners are in a classroom that is clean, well-lit, adequately ventilated, and arranged in a manner that supports movement and engagement, they tend to feel more comfortable, alert, and focused. This comfort contributes to their ability to participate actively in lessons, retain information, and develop a positive attitude towards learning. In contrast, classrooms that are poorly maintained, overcrowded, dimly lit, excessively hot or cold, or lacking essential furniture and instructional materials can discourage learners from concentrating and participating. A physically unappealing or uncomfortable environment may also lead to feelings of frustration, anxiety, or disinterest in school activities.

The physical classroom environment therefore acts as a key component in shaping the emotional, psychological, and intellectual experiences of learners. According to Taylor and Vlastos (2020), the layout and design of a classroom can be described as a "silent curriculum." This means that, even without the teacher directly teaching, the way a classroom is designed and arranged sends messages to learners about how learning should take place. For example, a classroom with cozy reading corners, labeled shelves, colorful displays of student work, and inviting seating arrangements promotes a culture of literacy, creativity, and learner-centered instruction. In contrast, a disorganized, bare, and rigid environment communicates to learners that learning is mechanical

and uninspiring. The “silent curriculum” can therefore either support or hinder the goals of the formal curriculum.

Beyond aesthetics and comfort, the physical classroom environment is deeply connected to academic achievement. Research has shown that the availability and quality of physical facilities, such as buildings, classrooms, libraries, and laboratories, significantly impact students’ learning outcomes. These facilities must not only exist but also be adequate, well-maintained, and relevant to the learners’ developmental needs. For instance, age-appropriate furniture, print-rich displays, visual aids, and access to books and materials all contribute to a more engaging and effective learning experience. When learners have access to these resources in a well-structured environment, their motivation increases, their attention spans improve, and their academic performance tends to rise.

On the other hand, when learners are placed in classrooms that are overcrowded or lacking basic resources, the quality of learning is compromised. Overcrowding can limit the teacher’s ability to interact with individual students, manage the class effectively, or organize group activities that foster collaboration. Additionally, a lack of space can prevent the teacher from setting up learning centers or stations for literacy, numeracy, and play-based learning, especially in early childhood classrooms. Poor infrastructure such as leaking roofs, broken windows, or uneven floors also pose safety risks and create distractions that interfere with teaching and learning processes.

The impact of the physical classroom environment is especially evident in early childhood education, where young learners are highly sensitive to their surroundings. Children in kindergarten or lower primary levels need

environments that are stimulating, colorful, and organized to support exploration and discovery. Play areas, story corners, writing tables, and visual learning materials such as letter charts and number lines are not just decorations—they are essential tools for promoting literacy and cognitive development. The strategic use of space in these classrooms supports movement, interaction, and hands-on learning, all of which are crucial for young children's development.

In this regard, the role of the teacher in managing and maximizing the use of the physical classroom environment is crucial. Teachers are not only responsible for delivering lessons but also for creating an environment that supports active learning. This includes organizing the furniture to allow for group work, ensuring that learning materials are within reach of learners, displaying educational posters and children's work, and maintaining cleanliness and safety in the classroom. A teacher who pays attention to these aspects helps learners feel valued and respected, which boosts their morale and interest in learning. Teachers who are trained in classroom management and early childhood pedagogies are better equipped to use the physical space effectively to support literacy development and other learning areas.

Moreover, the physical classroom environment is not isolated from other school facilities. Libraries, recreational areas, laboratories, and toilet facilities also contribute to the overall learning experience. The presence of a school library, for example, promotes reading culture, while access to clean washrooms and drinking water supports students' health and attendance. These aspects, though sometimes overlooked, play a foundational role in ensuring that learners are consistently present, attentive, and ready to learn. When school

facilities are lacking, learners may skip classes, become disengaged, or face health challenges that affect their academic progress.

In addition to improving learning outcomes, a well-prepared classroom environment helps in managing learner behavior. Children tend to behave better in environments that are structured, predictable, and respectful of their needs. Visual schedules, clear classroom rules, and labeled storage areas contribute to this structure and help children understand expectations. In contrast, cluttered, noisy, or confusing environments can lead to misbehavior, distractions, and reduced learning time. Thus, the physical environment indirectly contributes to discipline, time management, and classroom harmony.

Lastly, while the importance of the physical classroom environment is universally recognized, its quality varies significantly across different geographic and economic contexts. In developing regions and rural areas like parts of Ghana, many schools still struggle with inadequate infrastructure and teaching resources. In such settings, teachers may have to rely on improvisation and community support to enhance the classroom environment. Despite these challenges, there are inspiring examples of teachers who use local materials creatively to produce charts, organize storytelling areas, and construct letter cards that support literacy development. These practices reflect the resilience and innovation of educators who understand the powerful influence of the physical learning space.

In conclusion, the physical classroom environment is a fundamental component of effective teaching and learning. It affects learners' comfort, motivation, academic performance, and behavior. Classrooms that are well-organized,

resourceful, and inviting support learners' literacy development and help create a positive learning culture. Conversely, poorly maintained and resource-deficient classrooms negatively impact learners' morale and academic outcomes. Teachers, school leaders, and education stakeholders must therefore prioritize investments in school infrastructure, teacher training, and classroom management strategies that make physical environments more conducive to learning.

2.4 Concept of Literacy Learning

There are many definitions of literacy depending on which angle one is looking at it and how one understands it. The United Nations Educational, Scientific Organization defines literacy as, "The ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying context. Literacy involves a continuum of learning to enable an individual to achieve his/her goals, to develop his/her knowledge and potential, and to participate fully in the wider society (UNESCO, 2015).

It is all the activities involved in speaking, listening, reading, writing and appreciating both spoken and written language. Early literacy is, therefore, according to the Annual Edition (2015/16), the knowledge, skills and dispositions that precede learning to read and write in the primary grades. It is what learners know about reading and writing before they actually read or write. Early literacy is an emerging set of relationships between reading and writing. These relationships are situated in a broader communication network of speaking and listening, whose components work together to help learners negotiate the world and make sense of experience (Thelen & Smith 2013; Lewis

2017; Siegler 2017 cited in the Annual Edition for 2015/16). Learners need 'writing to help them learn about reading, they need reading to help them learn about writing; and they need oral language to help them learn both.'

Waldfoegel (2012), adds to say," The quality and nature of experiences in early childhood lay the groundwork for early literacy development and may also set a stage for potential problems." Effective early literacy instruction provides learners with developmentally appropriate settings, materials, experiences, and social support that encourage early forms of reading and writing to flourish and develop into conventional literacy.

Literacy and play must be linked because it is one of the most effective ways to make early literacy activities meaningful and enjoyable for learners. Juel, (2014) supports this assertion and says,

It is important to lay a solid foundation for literacy...because the trajectory of a child's reading progress at the end of first grade holds fairly steady during the course of primary school: A poor reader in the first grade continues to be a poor reader in the fourth grade: just as a good reader in the first grade continues to be a good reader in the fourth grade – unless instruction is improved.

A solid foundation in early literacy is critical because it determines the future well-being of an individual. As to whether the early literacy learning and teaching materials used by PLP are able to enhance the aforementioned skills is what this study intended to establish.

Furthermore, literacy is the ability to read and write in the modern world, this is one way of interpreting literacy. One more broad interpretation sees literacy as knowledge and competence in a specific area. The concept of literacy has

evolved in meaning. Simui *et al.*, (2017) the modern term's meaning has been expanded to include the ability to use language, numbers, images, computers, and other basic means to understand, communicate, gain useful knowledge, solve mathematical problems and use the dominant symbol systems of a culture. The concept of literacy is expanding across countries to include skills to access knowledge through technology and ability to assess complex contexts. Therefore, a person who travels and resides in a foreign country but is unable to read or write in the language of the host country would be regarded by the locals as illiterate. Hence, the key to literacy is reading development, a progression of skills which begins with the ability to understand spoken words and decode written words, and which culminates in the deep understanding of text.

Reading development involves a range of complex language-underpinnings including awareness of speech sounds, spelling patterns, word meaning, grammar and patterns of word formation, all of which provide a necessary platform for reading and comprehension (Silavwe, Mwewa and Mkandawire, 2019). Once these skills are acquired, a reader can attain full language literacy, which includes the abilities to apply to printed material critical analysis, inference and synthesis; to write with accuracy and coherence; and to use information and insights from text as the basis for informed decisions and creative thought (Conboy, 2016).

Learners begin to learn about reading and writing in infancy where they come into contact with print in their environment. Learners who have been read to, who have had the opportunity to 'read' their stories, who regularly see others reading and writing and who tend to experiment with writing, begin to

understand that print has meaning, as stated by one of the literacy papers presented. Goldenberg, Reese and Gallimore (2011) also confirm that learners' home experiences have a profound effect on their academic achievement. Academic learning activities at home promote achievement at school and as such, teachers should find ways to promote academic learning at home for their learners through homework. As stated by the cited researchers (Goldenberg, Reese, and Gallimore, 2011), learners' homes provide a print-rich environment which most parents might not realize. In the home, there are prints such as food labels, advertisements on television, clothes labels, names of utensils and equipment. These must be fully utilized by parents at home to help their learners develop the language and skills required to learn how to read. According to Annual Editions (2015/2016), parents also use printed matter in one or more of the variety of ways while interacting with their learners, as a source of entertainment, as a skill to be learned and as an integral ingredient of daily life. The home environment, therefore, should be appealing to young learners to support their reading and writing skills. They should be provided with age-appropriate materials for reading and writing such as pencils, crayons, paint brushes, paper, markers, magazines, story-picture books, reading games and other materials. Learners' exposure to printed material in the home appears to be facilitated by through parents' teaching and reading styles (Annual Editions 2015/2016: 52). 15 Early literacy experiences in every day context in the home provide a useful foundation for successful learning in school. Experiences that are actively encouraged by interested and supportive adults provide a useful foundation for successful literacy learning in school (Nyamu, 2015). Research further indicates that home literacy activities that

were positively related to achievement included parents reading for enjoyment, the availability of reading resources in the home, parental confidence in their ability to assist their learners with reading or mathematical homework, and learners spending no more than a moderate amount of time on school days on internet, televisions or playing computer games (Nyamu, 2015)

2.5 Empirical Review

2.5.1 Conducive Nature of the Physical Classroom Environments

A study conducted by Wilson and Davis (2019), found that classrooms designed with a focus on creating a stimulating and comfortable environment significantly enhanced learner learning experiences. The study highlighted that well-organized classroom with distinct areas for different activities, such as reading corners, creative play zones, and writing stations, fostered a more engaging and supportive learning environment. Additionally, the presence of visually appealing and interactive materials, such as educational posters and thematic decorations, was found to positively impact learners' motivation and attention during lessons. The study concluded that a thoughtfully designed physical environment contributes to higher levels of learner engagement and academic achievement.

Another study by Garcia and Martinez, (2020) investigated how physical classroom settings affect learner behavior and learning outcomes. The research revealed that classrooms that incorporate natural light, flexible seating arrangements, and adaptable spaces promote a more conducive learning environment. Teachers reported that classrooms with ample natural light and comfortable, adjustable furniture helped create a more inviting and less

stressful atmosphere for learners. The study also found that flexible classroom layouts that allow for easy reconfiguration to accommodate different learning activities supported better engagement and collaboration among learners. The findings emphasized that a well-designed physical environment not only supports academic learning but also contributes to improved learner behavior and overall well-being.

The study by Thompson and Clark, (2021) examined the impact of classroom design on learner learning and teacher effectiveness. The study highlighted that classroom with organized and accessible learning materials, such as labeled shelves and clearly defined learning zones, significantly contributed to a conducive educational environment. Teachers observed that learners were more likely to engage with learning materials and participate actively in classroom activities when the environment was well-structured and visually organized. The research also pointed out that classrooms equipped with interactive and multisensory resources, such as educational technology and hands-on learning tools, supported diverse learning styles and enhanced instructional effectiveness. The study concluded that creating a well-structured and resource-rich classroom environment is essential for fostering positive learning outcomes and supporting effective teaching practices.

Shamaki, (2015) conducted a study to determine the influence of learning environment on learners' academic achievement at senior secondary school level in Yobe state, Nigeria and found a significant difference between the mean performance of learners taught in an ideal learning environment and that of learners taught in a dull learning environment. Adamu, (2015) examined the

impact of learning environment on the Performance of Learners in public secondary schools in Taraba State, Nigeria and the findings revealed a significant difference in the performances of the two groups (Experimental and Control) implying that a classroom building; class with adequate furniture; class with small class population and the use of instructional materials has positive impact on the performance of learners in junior Secondary schools.

In a related development, Mudassir and Norsuhaily, (2015) conducted a study to examine how school environment influence learners' academic performance in selected secondary schools within Kuala Terengganu. The result of the study indicated that learners from a school with adequate facilities, good teachers and favorable environment perform better than those from schools with fewer facilities, unqualified teachers and less enabling environment. In another research by Duruji, Azuh and Oviasogie (2014), which examines the impact of learning environment on learners' performance in external examination in secondary schools in Ota, Nigeria considering factors such as school facilities, class size, school location and school plant planning, aesthetics, maintenance culture, sanitation, conveniences. The study established that "the state of learning environment and quality of infrastructure, together with the extent to which they are being maintained has a strong bearing to academic performance among learners".

Furthermore, Ezike, (2018) investigated classroom environment and learners' academic interest as correlates of achievement in Senior Secondary Chemistry learners in selected Public Secondary Schools in Ibadan, Oyo State, Nigeria. The result showed significant relationships between classroom environment and academic achievement, while combined contribution of classroom environment

and academic interest was equally significant. Gilavand (2016) in a study whose aim is to investigate the impact of environmental factors (schools' open space, noise, lighting and paintings in educational institutions) on learning and academic achievement of elementary learners, found that environmental factors (appropriate coloring, lighting of educational environment and schools' open space) have impact on learning and academic achievement of elementary school learners.

Eimuhi and Ogedegbe (2016) in a research titled the effect of environmental factors in teaching and learning in primary and secondary schools in Edo state of Nigeria examined environmental factors to determine the outcome of teaching and learning at all times and in all places and concludes that the more enriched the learning environments is, the greater and more widespread are the benefits for academic performance and other learner outcomes. Similarly, Odeh, Oguche, and Ivagher, (2015) conducted a research whose main thrust is to investigate the influence of school environment on academic achievement of learners in secondary schools. The results of the study indicate that school climate, discipline and physical facilities have significant influence on academic achievement of secondary school learners in Benue State, Nigeria. This implies that schools that fail to provide the necessary learning facilities and create a conducive atmosphere for teaching and learning may hardly put in the best in their learners especially in the area of academic achievement.

Cheema and Ware (2014) assessed the impact of school environment and peer influences on learners' academic performance in Kenya. The study explored the relationship between factors of learning environment and learners' academic performance in Vihiga County. The sample involved 777 sixth grade learners

from 41 schools. International System for Teacher Observation and Feedback (ISTOF) questionnaire was used to collect data on learners' perceptions of the school environment, academic involvement, and ethnic-cultural background. The factor analysis of the data found three factors of school environment that significantly influenced academic performance. The factors were teachers as helpful and good instructors, teachers as promoters of active learning and diversity, and teachers as managers and organizers of classroom activities. The study reported that about 12% of variations in learners' performance could be attributed to interactions between learners and teachers. The research, therefore, recommended that positive learner-teacher relationship is a predictor of quality learners' learning outcomes.

Uline and Tschannen-Moran (2018) investigated school facilities, school climate, and learners' academic performance in Virginia. The study sampled 80 teachers from middle schools and used School Climate Index, school facilities scale, and three resource support items like data collection tools. Bivariate correlational analysis was used to explore relationships between quality of facilities, resource support, school climate, and learners' academic performance. Multiple regression was conducted to test school climate as the mediating variable between the quality of facilities and academic performance. The results showed a positive relationship between the quality of school facilities and learners' academic performance ($r = 0.73$; $p < 0.01$). The study also found that learning facilities were significantly and positively related to school climate variables. The research concluded that quality school facilities and school climate play a significant role in learners' academic performance.

Suleman et al. (2014) explored physical classroom environment and learners'

academic performance in Pakistan. The research involved secondary school learners and examined the impact of physical classroom environment on learners' scores. The study employed pre-test-post-test equivalent groups approach for data collection. The study showed that a favorable classroom environment impacts positively on learners' academic performance in secondary school. The finding implies that a well-organized and equipped physical classroom environment facilitates effective teaching and learning and improves learners' academic performance.

Alimi et al. (2012) explored school facilities and learners' academic performance in Nigeria. The study investigated the effect of school physical environment, the school's architectural aesthetic, classroom setup, and school location on learners' academic performance in secondary school. The findings showed that school architectural design, including classroom arrangement, quality of school facilities, school landscape aesthetic contributed positively to learners' academic performance. The study concluded that a school physical environment that provides a favorable environment could improve learners' academic performance.

2.5.2 Kindergarten Teachers Use of Physical Classroom Environment in Facilitating Literacy Activities

This research, conducted by Smith et al. (2020), focused on examining how different environmental factors such as classroom layout, availability of literacy materials, and interactive displays affect learners' engagement and learning outcomes. The findings revealed that classrooms with designated literacy areas, including reading corners with a variety of books and interactive literacy games,

significantly enhanced learners' interest in reading. Additionally, the study found that flexible classroom layouts that allowed for both individual and group reading activities supported better literacy development. Teachers who utilized physical spaces effectively by incorporating literacy centers and creating inviting reading nooks reported higher levels of learner engagement and improvement in literacy skills.

Another study by Johnson and Lee (2019) explored the relationship between classroom arrangement and literacy instruction in early childhood education. Their research highlighted the importance of organizing classroom space to facilitate both structured and unstructured literacy activities. The study found that classrooms with clearly defined areas for different literacy activities, such as storytelling zones, writing stations, and interactive phonics games, helped learners develop various literacy skills more effectively. Teachers who designed their classrooms to encourage movement and exploration within these literacy zones observed increased learner participation and better comprehension of literacy concepts. The research emphasized that an organized and well-thought-out classroom environment supports diverse literacy practices and caters to different learning styles.

A study conducted by Martinez and Gomez (2021) examined how the physical classroom environment influences literacy outcomes and teacher strategies in kindergarten settings. This study focused on how environmental factors such as classroom décor, access to literacy resources, and the arrangement of materials impacted teaching effectiveness and learner literacy achievements. The findings showed that classrooms with rich literacy resources, including

alphabet charts, word walls, and thematic learning materials, were more effective in promoting literacy development. Teachers who utilized these resources creatively in their daily instruction observed improvements in learners' reading and writing abilities. The study concluded that a well-resourced and visually stimulating classroom environment plays a crucial role in supporting literacy activities and enhancing early literacy skills among kindergarten learners.

Kibria and Jones (2020) explored the impact of safe school environment on learners' academic performance in Tanzania. The investigation involved learners, teachers, and administrators in determining how a safe school environment influences learners' academic performance in primary schools. The study instruments included Early Grade Reading Assessment (EGRA), Early Grade Mathematics Assessment (EGMA) and Snapshot of School Management Effectiveness (SSME). The EGRA was used to assess learners' literacy abilities by emphasizing orthography, fluency, reading and comprehension. Numeracy skills were also tested using EGMA to evaluate learners' basic mathematical and problem-solving abilities. The SSME tool measured the school learning environment focusing on learners' demographics, management, infrastructure, teaching resources, safety, and management relationships with school community. Learners' academic performance measurement entailed learners' standardized test scores in English language and mathematics. The study established that school safety was an important indicator of school learning environment that contributed significantly to learners' academic performance. It also found that learners' demographic characteristics and home factors influenced learners' learning. The inquiry, thus, concluded that a congenial

school learning environment could improve learners' academic performance.

Baidoo-Anu (2018) investigated the influence of school and home environments on learners' academic performance in Ghana. The research involved learners and teachers in junior high schools because their perceptions provided insight on teaching and learning factors affecting academic performance. The study was carried out at the Asikuma-Odoben-Brakwa District to explore factors related to school and home that affected learners' performance in Basic Education Certificate Examination (BECE). The instrument used to assess these factors consisted of two validated pre-test self-design questionnaires for learners and teachers. While teachers' tool considered perceptions of home conditions, learners' instrument assessed school-related factors. Learner academic performance was measured by scores achieved in BECE using WAEC grading system. Findings of the study showed that learners' poor academic performance was related to school and home factors. The school factors included insufficient teaching and learning supplies, sub-standard school infrastructure, inadequate school facilities such as library and classrooms. The home factors consisted of lack of parental school involvement, especially in parent-teacher association (PTA) activities. The study also established that parents' inability to provide needed academic support to learners negatively affected their academic performance. The research concluded that school teaching environment, parental school involvement, and academic support were significant determinants of learners' academic performance. The finding implies that learners' academic 13 performance can improve if school teaching and home environments are favorable for learning.

Asamoah et al. (2020) investigated school environment and learners' academic performance in public senior high schools in Ghana. The study was conducted in Kumasi metropolis and explored school environment, teacher and learner factors that caused learners' poor academic performance in core mathematics in WASSCE. The survey involved learners in senior high school and mathematics teachers and used questionnaire for data collection. Academic performance was assessed using standardized test scores in WASSCE. The research found that learners' poor academic performance in public senior high schools was caused by teachers and teaching environment factors. The factors included insufficient teaching and learning materials, textbooks for teachers and learners, and inadequate continuous teacher professional development programs. The study also established that teaching methods, teacher subject content mastery, teacher-learner relationships, academic support for learners' learning and teacher punctuality were predictors of poor academic performance in mathematics. The factors impeded learners' academic performance and were related to the school teaching environment. By inference, a school teaching environment is vital for achieving effective learning outcomes. The finding implies that a school with a well-resourced teaching environment can enhance teaching and learning and improve learners' academic performance.

Opoku-Asare and Siaw (2015) assessed disparities in rural and urban school learning environments and learners' academic performance in Ghana. The study was carried out in Kumasi metropolis and involved learners in senior high school to establish factors that accounted for variations in rural and urban learners' academic performance in Visual Arts. 14 Participants included 120

learners and 18 teachers randomly selected from six schools. The mixed-methods approach consisting of questionnaire, observation, and interviews was used for data collection. Learners' academic performance was measured by grades achieved in WASSCE. The findings attributed variations in learners' academic performance to factors like learners' entry grades, school facilities, school location, learners' background, and motivation. The research also established that learners in urban senior high schools performed better than those in rural schools. The disparity in performance was as a result of urban schools attracting learners with higher entry grades. Additionally, the study found that learners in urban schools were more motivated by their learning environment to achieve higher academic output than their colleagues in rural schools. The study concluded that school location and adequate school facilities are essential factors that improve school learning environment and learners' academic performance.

2.5.3 Challenges Kindergarten Teachers Face in Using the Physical Classroom Environment for Literacy Activities

According to the study conducted by Brown and Green (2018), identified several barriers, including insufficient space and inadequate resources. Teachers reported difficulties in creating dedicated literacy areas due to cramped classroom layouts, which hindered their ability to implement diverse literacy centers effectively. Additionally, the study highlighted that a lack of sufficient and varied literacy materials, such as books and educational games, limited the effectiveness of literacy instruction. The findings emphasized that teachers often struggle to balance the need for space and resources with the demands of

a structured curriculum, impacting their ability to fully engage learners in literacy activities.

Another study by Adams and Thompson (2020) investigated how physical classroom constraints affect kindergarten teachers' ability to implement literacy activities. The study found that classroom design often fails to support the dynamic nature of literacy instruction, with many teachers facing challenges related to poor visibility and accessibility of literacy materials. Teachers noted that the arrangement of furniture and materials often obstructed their ability to effectively supervise and interact with learners during literacy activities. The research revealed that inadequate classroom layouts, coupled with limited access to interactive and age-appropriate literacy resources, created obstacles to delivering effective literacy instruction and engaging learners in meaningful learning experiences.

A study conducted by Patel and Wong (2021) explored the difficulties kindergarten teachers encounter in using the physical classroom environment to facilitate literacy development. The study focused on the impact of classroom organization on teachers' ability to conduct literacy activities. Findings indicated that teachers frequently face challenges related to the clutter and disorganization of classroom spaces, which can detract from the learning environment. Issues such as limited storage space for literacy materials and the absence of flexible furniture arrangements were identified as significant impediments. The research highlighted that these physical constraints not only affect the ease with which teachers can access and utilize literacy resources but also impact learners' engagement and motivation in

literacy activities. The study concluded that improving classroom organization and providing better resources are essential for overcoming these challenges and enhancing literacy instruction.

Kitonyi, (2013) did a study on different learning environments contribute to poor performance in the schools. In this area necessitated the need to investigate on the school and home environment affecting the academic results in KCPE. The purpose of the study was to examine the relationship between school environment, psychological environment and home environment and how they all influence the academic performance of the learners. Descriptive survey design was used. The target populations were learners, and teachers from public primary schools in Kaiti Division. Stratified random sampling was used in selecting the population sample. Instruments for data collection were questionnaires for teachers and learners. Data was collected in selected schools in the division using the questionnaire designed. The data was then processed using Statistical Package for Social Sciences (SPSS). Piloting of the instruments was done at Makongo primary School. The results were intended to guide stakeholders in improving the learning environment with a view to improving learners' performance.

From the study findings, the study concluded that the major factors hindering learners' performance were lack of teaching and learning resources, lack of adequate physical facilities, very high Teacher-learners ratio (TLR). The ratio of the latrines for both genders was very high and therefore the hygiene and sanitation facilities were not adequate and therefore low cleanliness of the toilets rendered the school environment non conducive for learning. The lack of

learning and teaching resources negatively influenced the learners' performance. The teachers used participatory method of teaching as they allowed the learners to ask questions. The participatory method of teaching by the teachers served to enhance the learning environment as the learners were part of the learning process.

The learning environment at learners' homes was not conducive for learning which contributed to poor performance. The family that the learners came from played a significant role in enhancing the academic performance of the learners. The learning environment at home was highly non-conducive for learning and therefore the learners' performance was negatively affected. The study recommends that to avert the problem of declining learners' academic performance in schools the government and other stakeholders should invent new policies and strategies to improve the school environment. The school management and other policy makers in the education sector should sensitize the parents and learners on ways of improving the home environment and make it more conducive for learning.

Muddasir et al (2015) investigated on school environment influence on learners' academic performance. The main objective of the study was to analyze how school facilities, teachers and environment significantly affect secondary school learners' academic performance in Kuala Terengganu, Malaysia. Descriptive Survey Research design was used in which data from 377 respondents was collected using self-administered questionnaire from 4 selected secondary schools within Kuala Terengganu. Stratified random sampling technique was used to sample the respondents. The data was

analyzed using regression analysis. The result was based on three forms; Demographic information, descriptive analysis and inferential analysis. The result of the study indicated that learners from a school with adequate facilities, good teachers and favorable environment perform well than those from schools with fewer facilities, unqualified teachers and the less enabling environment. Finally, recommendations were given to parents, teachers, policy makers and educational administrators.

Duruji (2007) on his study of learning environment on academic performance on secondary school, external examination in Nigeria. The physical characteristics of schools have a variety of effects on teachers, learners, and the learning process they stated poor lighting, noise, high levels of carbon dioxide in classrooms, and inconsistent temperatures make teaching and learning difficult. Poor maintenance and ineffective ventilation systems lead to poor health among learners as well as teachers, which lead to poor performance and higher absentee rates (Fraser, 1985; Lyons, 2001). These factors can extremely lead to the poor performance of the secondary learners.

Lumpkin (2013) further explains that the need for good environment is not in isolation from other factors. Good learning environment must be blended with good standard, qualified teachers, and good management to achieve good academic performances of learners in examinations. Edgerton et al (2008), arguing from a psychological is of the view that there is a psychological relationship between the nature of the school facility and those that are within the environment that is both teachers and learners. However, they further explain that for effective learning to occur there should be a synergic

relationship between high moral, commitment and enthusiasm and high learning there will be effective learning (Moore, 2008 as cited in Lumpkin, 2013).

HakiElimu, (2013) conducted a study in Tanzania to investigate the effects of school characteristics (school climate) on learners' academic achievement. They revealed that the performance of learners might be affected by the following aspects; viz. school ownership (i.e. central government own, community, religious own and private or individual owned schools) school location (rural or urban), school resources, community involvement and teaching and learning factors (that is teachers-learner ratio, availability of teaching and learning facilities such as books, desks and chairs, availability of essential utilities such as water, electricity, toilets, etc. teachers' characteristics, including teachers' professional qualifications, experience, age, sex etc. as well as teachers' working conditions e.g. availability of public services, housing etc. and lastly teachers' motivation systems). It was concluded that, the above-named factors could affect learners' academic performance.

Denial, (2014) examined the impact of the school environment and peer influence on the learners' academic performance. The study assessed school environment factors and peer influence in term of the level of psychological impact they have on learners. Twenty-one public secondary schools in sabbatical established that school environment exert a potent influence on learners' academic performance. The school as an institution of learning which also act as a second home for learners has been found to have a strong relationship with learners' academic performance.

2.6 Conceptual Framework

The conceptual framework outlines the relationships between independent variables, intervening variables, and the dependent variable in the context of teachers' use of physical classroom for literacy activities in Nkwanta North district, Ghana. Figure 2.1 depicts the conceptual framework.

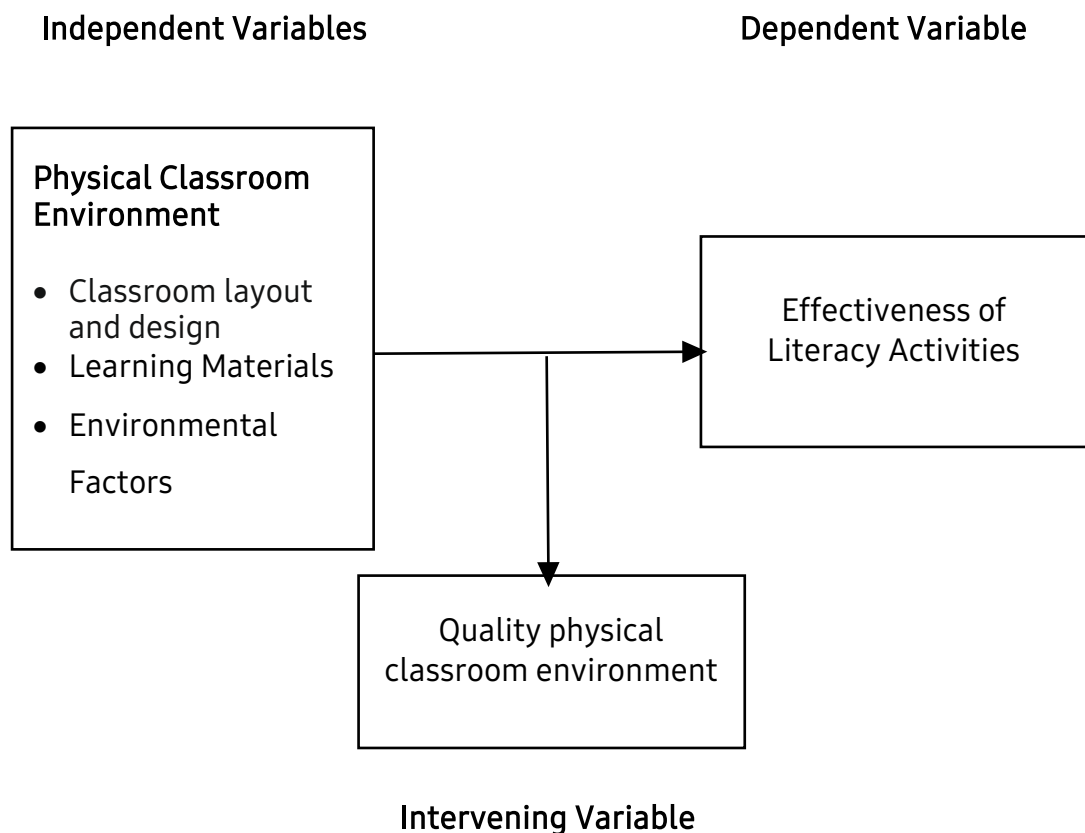


Figure 1: Conceptual Framework

The Relationship between Variables

This conceptual framework examines the relationship between kindergarten teachers' use of the physical classroom environment and the effectiveness of literacy activities in the Nkwanta North District of Ghana. The independent variables include Classroom Layout, Learning Materials, Environmental Factors,

each impacting how effectively literacy activities are conducted.

Effectiveness of Literacy Activities is assessed through learner engagement, literacy development, and classroom interaction. These factors are expected to influence the quality of the classroom environment, which in turn will affect learners' literacy development. By examining these variables, the study hopes to provide insights into effective strategies for improving literacy outcomes in kindergarten classrooms.

2.7 Summary of Chapter

The reviewed literature on early literacy suggests that for learners to acquire literacy skills and competencies, the medium of instruction should be familiar to the learners. The review has also shown that learners need to be provided with literacy rich environment both at home and at school. This kind of environment should allow them to interact with reading materials that interest them. Adequate and diverse reading materials need to be available to create readers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter presents the methodology of the study. The chapter covers the following subheadings; research approach, research design, target population, sample and sample techniques, research instruments, data collection procedures and data analysis procedures and ethical consideration.

3.2 Research Approach

The quantitative approach was employed for the purpose of the study. This approach uses statistical methods to clarify what is understood and needs to be learned through analysis (Creswell & Plano Clark, 2011). It aids in understanding cause and effect relationships among variables under study. It also relies on descriptive and inferential statistical tools into drawing inferences about a population. Saunders and Lewis (2012) revealed that this approach collects and transforms data into a numerical form in order to allow statistical analysis to be carried out and draw concrete conclusions. Creswell and Creswell (2017), added that the approach provides more objective

responses and is suitable for examining the effect of one variable on the other. The study, therefore, adopted quantitative approach because it purposely investigates teacher's use of physical classroom to promote literacy learning in kindergarten schools in Nkwanta North district, Ghana.

3.3 Research Design

This study employed a descriptive survey research design, because according to Mugenda and Mugenda, (2003) such a research design helps the researcher to determine the immediate status of population so as to come up with conclusion about the facts discovered. According to Orodho (2004), descriptive survey design allows the use of instruments like questionnaire which the research would adopt during data collection. It could also produce unreliable results since enquiries into private matters may make respondents feel reluctant to co-operate (Gay et al., 2016). Despite these limitations, the researcher believed that this research design was appropriate based on the nature of the study.

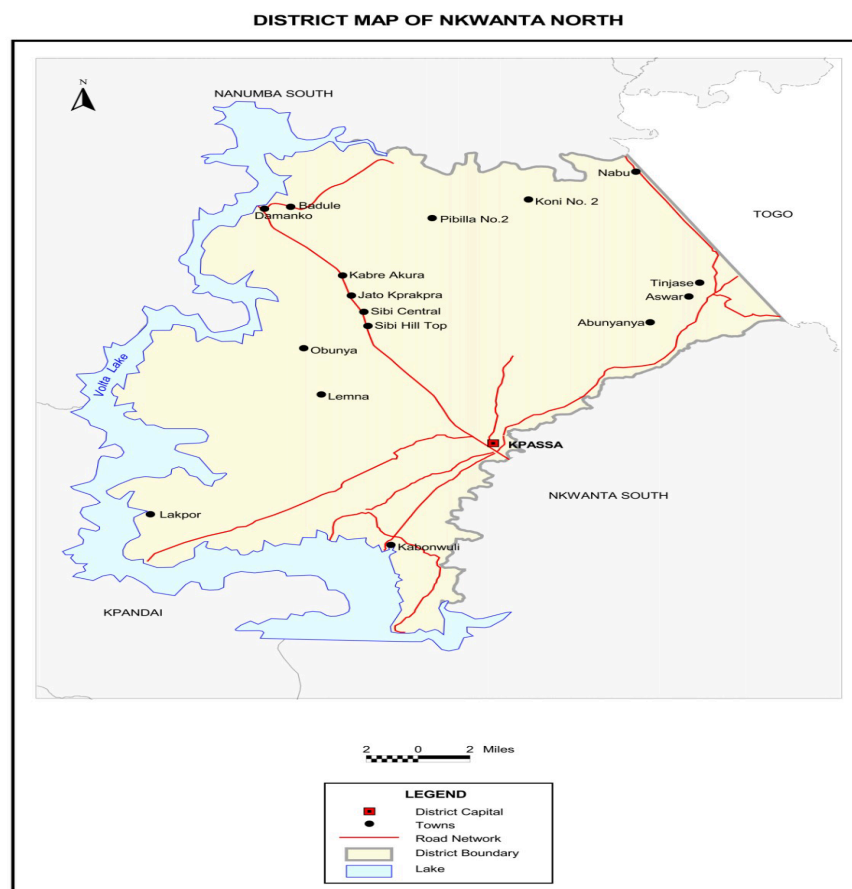
3.4 Study Setting

The Nkwanta North District is one of the newly created districts carved out of the Nkwanta District by L1 1846 and inaugurated in February 29, 2018. The capital of the district is Kpassa, which is about 270 km from Dambai, the regional capital. The District is located in the north Eastern part of the Oti Region and lies between latitude 7°30'N and 0°45'E latitude 8°45'N and 0°10'W. It shares common boundaries with the Nanumba South district to the north, Nkwanta South district to the south, Republic of Togo to the East, and Kpandai district to the west. The district has a total land surface area of approximately

1510 km² (about 7.13%) of the total land area of the region).

Based on the 2017 population and housing census (60,517) and population growth rate of 3.0%. The current population is estimated to be at 78,672. The district is unique because it has several potentials. Generally, the district experiences prolonged perennial rainfall season from May to October suitable for crop production. The annual rainfall figures range between 922mm and 1,874 mm. Agriculture is the main economic activity which employs about 80% of the inhabitants. The major crops grown are: yam, cassava, maize, groundnuts, cowpea and rice.

Figure 2. Map of Nkwanta North district



Source: Ghana Statistical Service, GIS

3.5 Population of the Study

In this study, the target population were all kindergarten teachers in Nkwanta North district in Ghana. Thus, the target population of the study was 210.

3.6 Sample and Sampling Techniques

The sample size was determined using Slovin's formula presented as:

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = sample size,

N = sampled population and

e = error tolerance.

In this case, the researcher proceeded with an error of 5% and confidence coefficient of 95%.

The estimated target population was N = 210. Therefore, the sample population

(n) was;

$$n = \frac{210}{1 + 210 (0.05)^2}$$

$$n = \frac{210}{1 + 210 (0.0025)}$$

$$n = \frac{210}{1 + 0.5}$$

$$n = \frac{256}{1.5}$$

$$n = 140$$

So therefore, the sample size was 140 respondents. The study used simple random sampling technique to select the kindergarten teachers.

3.7 Research Instrument

The researcher used questionnaires for data collection. A structured questionnaire was used to gather primary data from the respondents in an attempt to collect data from the sampled respondents. On a Likert-like scale, the questionnaire was organized with 1 representing the least agreement, while 4 represented the highest agreement. For the analysis of data using both descriptive and inferential statistical methods, the scale is important. Kerlinger (1973) observed that the questionnaire is widely used for collecting data in educational research because it is very effective for securing factual information about practices and conditions of which the respondents are presumed to have knowledge. Questionnaire is a useful and widely used instrument for collecting survey information, providing structured and often numerical data. Also, it is useful for the collection of data without the presence of the researcher, and it is often comparatively straight forward to analyze (Cohen, Manion & Morrison, 2015).

3.8 Validity and Reliability of the Research Instrument

Validity refers to the accuracy, meaningfulness, and technical soundness of the research instrument (Creswell, 2014). To ensure validity, the drafted questionnaire was reviewed by peers with a solid research background, who

provided feedback on its content and structure. Additionally, experienced data analysts critiqued the questionnaire to ensure its comprehensiveness. Finally, the researcher's supervisor, with extensive knowledge in the research field, thoroughly examined the instrument and helped address any issues before the actual data collection. In this study, content validity was employed, ensuring that the questionnaire accurately covered all relevant aspects of the research topic.

The research instruments were pilot-tested in 10 kindergarten centres in the Ga East Municipality, which was selected for the pilot test due to its shared characteristics with the Nkwanta South district. Twenty (20) Kindergarten teachers were selected for the pre-test. The respondents were given draft copies of the questionnaire. They were made to answer the questions and discuss with the researcher, clarity, and relevance of the items on the instrument, format, order, and sequence of the questions, and any other thing that can help improve the instrument for the main study. All the issues raised during the discussion were duly acknowledged and all necessary corrections were done before the actual data collection commenced in the study area.

To assess reliability, the study used the test-retest technique. The questionnaires were administered twice to the same group of respondents, with a two-week interval between administrations. This approach allowed the researcher to determine the reliability coefficient, which was found to be 0.85, indicating a high level of consistency in the responses. By incorporating these validity and reliability measures, the study aims to ensure that the research instrument provides accurate and consistent data, thereby enhancing the credibility of the research findings.

3.9 Data Collection Procedures

An introductory letter was obtained from the office of Early Childhood Education to facilitate the process. Before the administration of the data collection instruments of this study, the researcher visited the four (4) sampled kindergarten schools so as to familiarize with physical classroom learning environment in Nkwanta North district, Ghana. Teachers were issued with consent forms to indicate their willingness to participate in the study. After establishing the necessary contact with the teachers of the selected schools. The researchers explained the purpose of the study to the respondents. In order to ensure clarity of how the questionnaire could be completed, the researchers administered the questionnaire personally during regular school time with the aid of two skilled and trained research assistants. After they had responded to the items, the questionnaires were collected by the researcher. However, questionnaire was collected the same day and the retrieved rate was 100%.

3.10 Data Analysis

Data collected was descriptively analyzed using a Statistical Package for Service Solution (SPSS) version 21. Data was then presented in tables, frequencies and percentages to give a clear presentation.

3.11 Ethical Considerations

Patten and Newhart (2017), suggested some major rules of data collection: anonymity, confidentiality, right to privacy and plagiarism issues. However, the data collection instrument made no room for obtaining personal details of the respondents. This was done to ensure anonymity of the respondents. The study also ensured confidentiality of the opinions obtained from the respondents. The

respondents were also told that none of the data provided would be disclosed to third parties.

To ensure right to informed consent, the potential research participants were given sufficient information to make knowledgeable decision to participate or withdraw from participation at any stage of the data collection process. Anonymity and confidentiality were ensured since questionnaire to respondents did not require them to write their names and addresses. The respondents were allowed to withhold any information they felt uncomfortable in order to ensure their right to privacy.

The right to privacy was also accomplished by encouraging respondents to fill out the questionnaire on their own, but left vague statements unanswered by their own convenient medium for further explanations. The study concluded that no aspect of the research jeopardized the lives of the participants in any case.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Overview

This chapter provides the findings and analysis of the data gathered in this study.

4.1 Socio-Demographic Characteristics of Respondents

This study encompassed participants with diverse demographic attributes. The variables considered were gender, age, level of education and years of teaching experience of the respondents.

Table 1: Respondent's Gender

Gender	Frequency	Percentage %
Male	95	67.9
Female	45	32.1
Total	140	100

Source: Field Data, (2024)

According to Table 1, 45(32.1%) were females, whereas 95(67.9%) were males. Based on the aforementioned outcome, the majority of the respondents were males.

Table 2: Age of the Respondents

Age group	Frequency	Percentage %
25 - 30years	77	55.0
31 to 40years	40	28.6
41 years and above	23	16.4

Total	140	100
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Source: Field Data, (2024)

Table 4.2 shows the frequency distribution of the age range of the respondents. The data reveals that respondents aged 25-30 accounted for 77, representing 55.0%. Those aged 31-40 accounted for 40, making up 28.6%. Respondents aged 41 and above constituted 23 individuals, comprising 16.4% of the total. This data suggests that those aged 25-30 constituted the highest proportion of responses.

Table 3: Level of Education

Education	Frequency	Percentage
Diploma	56	40.0
Degree	78	55.7
M.Phil.	6	4.3
Total	140	100.0%

Source: Field Data, (2024)

According to Table 4.3, 56 (40.0%) had their diploma, 78(55.7%) had their degree, whereas only 6(4.3%) had their M.Phil. Based on the aforementioned outcome, the majority of the respondent had their degree.

Table 4: Distribution of respondents by years of teaching experience.

Years of Teaching		
Experience	Frequency (N)	Percentage (%)
Less than 4 years	24	17.1
4 - 8 years	69	49.3

8 - 12 years	31	22.1
12 years and above	16	11.4
Total	140	100

Source: Field Data, (2024)

Table 4 shows years of teaching experience by respondents. It was revealed that 24 (17.1%) had gained teaching experience less than 4 years, 69 (49.3%) respondents gained teaching experience between 4 - 8 years, 31 (22.1%) respondents had teaching experience between 8 -12 years, while 16 (11.4%) respondents had gained teaching experience above 12 years.

4.2 Presentation of Findings

4.2.1 Conducive nature of the physical classroom environments

The first objective of the study was to determine the conducive nature of the physical classroom environments in selected kindergarten schools towards literacy learning in Nkwanta North district. The findings are presented in Table 5

Table 5: Responses on the conducive nature of the physical classroom environments in selected kindergarten schools in Nkwanta North district

Statements	SD	D	N	A	SA
The classroom space is ample for learners to participate in literacy activities comfortably.	17(12.1%)	8(57 %)	2(1.4%)	53(37.9)	60(42.9%)

The ventilation in the classroom supports a comfortable learning environment.	48(34.3%)	13(9.3%)	6(4.3%)	28(20.0%)	45(32.1%)
The classroom layout is organized to support effective literacy activities.	9(6.4%)	21(15.0%)	1(0.7%)	36(25.7%)	73(52.1%)
The classroom is equipped with sufficient educational materials for literacy learning.	2(1.4%)	10(7.1%)	5(3.8%)	53(37.9%)	70(50.0%)
The lighting in the classroom is adequate for reading and writing activities.	11(7.9%)	10(7.1%)	3(2.1%)	48(34.3%)	68(48.6%)

Source: Field Data, (2024)

The findings from Table 5 revealed that, a majority of respondents, 53 (37.9%) and 60 (42.9%), feel that the classroom space is sufficiently ample for learners to comfortably engage in literacy activities. This indicates that most learners find the space conducive for their educational needs. However, a small percentage, 17 (12.1%) and 8 (5.7%), expressed dissatisfaction with the space, suggesting some learners face challenges due to space constraints, with 2 (1.4%) being uncertain. When evaluating ventilation, a notable number of respondents, 48 (34.3%) and 13 (9.3%), disagreed that the classroom ventilation is adequate for a comfortable learning environment. In contrast, 28 (20.0%) and 45 (32.1%) agreed that the ventilation is supportive. This disparity highlights that while some learners find the ventilation acceptable, a significant portion feels it does not meet their needs, with 6 (4.3%) remaining neutral.

Regarding the organization of the classroom layout, a substantial majority, 36 (25.7%) and 73 (52.1%), agreed that the layout supports effective literacy activities. This suggests that the majority of learners believe the classroom arrangement facilitates their learning. On the other hand, 9 (6.4%) and 21 (15.0%) disagreed, indicating some issues with the layout, with only 1 (0.7%) unsure. The adequacy of educational materials in the classroom for literacy learning was positively noted by 53 (37.9%) and 70 (50.0%) of the respondents, who agreed that there are sufficient materials available. This demonstrates that most learners find the resources ample for their literacy activities. Conversely, 2 (1.4%) and 10 (7.1%) disagreed with this statement, and 5 (3.8%) were uncertain, pointing to some concerns about material availability.

Lastly, the adequacy of classroom lighting for reading and writing was affirmed by 48 (34.3%) and 68 (48.6%) of the respondents, suggesting that most learners find the lighting appropriate for their activities. However, 11 (7.9%) and 10 (7.1%) disagreed, indicating some dissatisfaction with the lighting conditions, and 3 (2.1%) were neutral. Supporting this analysis, a study by Moore et al. (2015) found that physical classroom conditions, including space, ventilation, and lighting, significantly impact learner engagement and learning outcomes. The study underscores the importance of these environmental factors in creating an effective educational setting.

4.2.2 Kindergarten teachers use of physical classroom environment in facilitating literacy activities in Nkwanta North district

The second objective of the study was to evaluate how kindergarten teachers utilize the physical classroom environment to facilitate literacy activities in

Nkwanta North district. The findings are presented in Table 6

Table6: Responses on how kindergarten teachers utilize the physical classroom environment to facilitate literacy activities in Nkwanta North district

Statements	SD	D	N	A	SA
Teachers effectively use the classroom layout to organize literacy activities	9(6.4%)	21(15.0%)	1(0.7%)	36(25.7%)	73(52.1%)
Teachers make good use of available learning materials to enhance literacy instruction	2(1.4%)	10(7.1%)	5(3.8%)	53(37.9%)	70(50.0%)
Teachers utilize the classroom space creatively for literacy-related activities	11(7.9%)	10(7.1%)	3(2.1%)	48(34.3%)	68(48.6%)
Teachers manage environmental factors such as lighting and ventilation to improve literacy learning	48(34.3%)	13(9.3%)	6(4.3%)	28(20.0%)	45(32.1%)
Teachers use visual aids and interactive materials effectively in literacy activities	17(12.1%)	8(5.7%)	2(1.4%)	53(37.9%)	60(42.9%)

Source: Field Data, (2024)

The findings from Table 6 shows that, a significant majority, 36 (25.7%) and 73 (52.1%), feel that teachers effectively use the classroom layout to organize literacy activities. This indicates that most respondents believe the classroom arrangement supports effective literacy instruction. However, a smaller

proportion, 9 (6.4%) and 21 (15.0%), disagreed, suggesting that there may be some issues with how the layout is used, with only 1 (0.7%) uncertain. When it comes to the use of available learning materials, 53 (37.9%) and 70 (50.0%) of the respondents agreed that teachers make good use of these resources to enhance literacy instruction. This suggests that the majority of learners feel that the materials provided are effectively utilized in literacy activities. Conversely, 2 (1.4%) and 10 (7.1%) disagreed, and 5 (3.8%) were unsure about the effectiveness of material use.

In terms of creatively utilizing classroom space for literacy-related activities, 48 (34.3%) and 68 (48.6%) of the respondents agreed that teachers make creative use of the space. This reflects that many learners perceive the space as being used innovatively to support literacy. However, 11 (7.9%) and 10 (7.1%) disagreed with this view, and 3 (2.1%) were neutral, indicating some dissatisfaction with how the space is utilized. Regarding the management of environmental factors such as lighting and ventilation, 48 (34.3%) and 13 (9.3%) of the respondents disagreed that teachers manage these factors effectively to improve literacy learning. In contrast, 28 (20.0%) and 45 (32.1%) agreed, highlighting that while some learners believe environmental factors are managed well, a significant number feel that these aspects could be improved.

Lastly, the effective use of visual aids and interactive materials in literacy activities was supported by 53 (37.9%) and 60 (42.9%) of the respondents. This indicates that a large portion of learners feels that visual and interactive materials are well-integrated into literacy activities. However, 17 (12.1%) and 8 (5.7%) disagreed with this statement, and 2 (1.4%) were uncertain, suggesting

that there may be variability in how these materials are utilized. Supporting this analysis, a study by Morrow and Smith (2013) highlights the importance of teachers' effective use of classroom resources and environmental factors in promoting literacy development. The study emphasizes that optimal use of classroom layouts, materials, and environmental management plays a crucial role in enhancing literacy outcomes.

4.2.3 Challenges kindergarten teachers face in using the physical classroom environment for literacy activities

The third objective of the study was to identify the challenges kindergarten teachers face in using the physical classroom environment for literacy activities in Nkwanta North district. The findings are presented in Table 4.7

Table 7: Responses on the challenge kindergarten teachers face in using the physical classroom environment for literacy activities in Nkwanta North district.

Statements	SD	D	N	A	SA
Limited classroom space restricts the implementation of literacy activities.	11(7.9%)	10(7.1%)	3(2.1%)	48(34.3%)	68(48.6%)
Insufficient educational materials hinder the effectiveness of literacy instruction.	48(34.3%)	13(9.3%)	6(4.3%)	28(20.0%)	45(32.1%)
Poor lighting in the classroom affects the quality of literacy activities.	2(1.4%)	10(7.1%)	5(3.8%)	53(37.9%)	70(50.0%)
High noise levels in the classroom disrupt literacy activities.	17(12.1%)	8(5.7%)	2(1.4%)	53(37.9%)	60(42.9%)

Inadequate ventilation in the classroom impacts learners' ability to focus on literacy tasks.	9(6.4%)	21(15.0%)	1(0.7%)	36(25.7%)	73(52.1%)
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Source: Field Data, (2024)

The findings from Table 7 revealed that, a notable challenge is limited classroom space, with 48 (34.3%) and 68 (48.6%) of respondents agreeing that it restricts the implementation of literacy activities. This indicates that many learners perceive space constraints as a barrier to effective literacy instruction. However, 11 (7.9%) and 10 (7.1%) disagreed, suggesting that some may not view space as a significant issue, while 3 (2.1%) were neutral.

Another major challenge is insufficient educational materials. According to the responses, 48 (34.3%) and 13 (9.3%) disagreed that a lack of materials hinders literacy instruction, while 28 (20.0%) and 45 (32.1%) agreed that the lack of materials affects the effectiveness of teaching. This suggests that while some learners acknowledge the impact of insufficient resources, others may feel that the materials available are adequate or that the issue is less critical. Poor lighting is also identified as a challenge, with 53 (37.9%) and 70 (50.0%) agreeing that it affects the quality of literacy activities. This indicates that many learners find inadequate lighting to be a significant problem. Conversely, only 2 (1.4%) and 10 (7.1%) disagreed with this statement, and 5 (3.8%) were uncertain, suggesting that lighting is generally perceived as a critical factor affecting literacy instruction. High noise levels in the classroom are reported to disrupt literacy activities, with 53 (37.9%) and 60 (42.9%) agreeing that noise levels are a problem. This reflects a significant concern about how noise impacts the learning environment. On the other hand, 17 (12.1%) and 8 (5.7%)

disagreed, and 2 (1.4%) were neutral, indicating some variability in the perception of noise as a disruptive factor.

Lastly, inadequate ventilation is seen as impacting learners' focus, with 36 (25.7%) and 73 (52.1%) agreeing that poor ventilation affects learners' ability to concentrate on literacy tasks. This suggests that many learners find ventilation issues to be a significant challenge. In contrast, 9 (6.4%) and 21 (15.0%) disagreed, and 1 (0.7%) was neutral, reflecting some differences in perceptions regarding the impact of ventilation on learning. Supporting this, a study by Knez, (2017) found that environmental factors such as classroom space, lighting, noise, and ventilation significantly influence learner concentration and learning outcomes. Knez's research underscores the importance of optimizing the physical classroom environment to enhance the effectiveness of educational activities.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents summary of the study based on the research objectives, conclusions, recommendations, and suggestions for further research.

5.1 Summary of Key Findings

The study found that a significant majority of respondents believe that teachers effectively use the classroom layout to organize literacy activities, indicating that most learners feel the arrangement supports effective literacy instruction. However, a smaller group disagreed, suggesting some issues with how the layout is used, while only one respondent was uncertain.

The study found that one notable issue is limited classroom space, which many respondents agreed restricts the implementation of literacy activities. This indicates that space constraints are seen as a significant barrier to effective literacy instruction by a majority of learners, though a smaller group did not view this as a major concern. Another challenge identified is the insufficiency of educational materials, with respondents divided on the extent to which this

hinders literacy instruction. While some agreed that the lack of resources negatively affects teaching effectiveness, others felt that the materials available are adequate, suggesting differing views on the impact of this issue.

5.2 Conclusions

Physical classroom provides a favorable atmosphere for learning and enables learners to enhance their literacy learning activities. Based on the finding of the study, majority of learners find the classroom space sufficient for engaging in literacy activities, suggesting that the environment is generally conducive to learning. However, there are concerns about specific factors, such as ventilation, where a significant portion of respondents expressed dissatisfaction. This disparity suggests that while the classroom environment is overall supportive, there are key areas (like ventilation) that require improvement to ensure a more universally conducive learning experience. Additionally, while the layout and lighting are seen as generally supportive, some learners experience challenges, indicating that the classroom setup could be further optimized.

The study also concluded that limited classroom space is a notable issue, affecting how literacy activities are conducted. Additionally, the availability of educational materials and poor lighting are recurring challenges that hinder teaching effectiveness. Noise levels and inadequate ventilation further compound the difficulties faced by both teachers and learners in maintaining an optimal learning environment. These challenges reflect broader issues related to resource allocation and classroom infrastructure that need to be addressed to improve literacy outcomes.

5.3 Recommendations

1. The study recommended that the Educational Directorate within the district should regularly assess and improve the physical classroom environments in selected kindergarten schools to ensure they are safe, stimulating, and conducive for literacy activities, such as reading corners, child-friendly furniture, and access to age-appropriate books and learning materials.
2. The study recommended that the Educational Directorate within the district should provide professional development and in-service training for kindergarten teachers on how to effectively utilize classroom space and materials to promote literacy activities, including the use of print-rich environments, learning centers, and interactive displays.
3. The study recommended that the Educational Directorate within the district should conduct periodic monitoring and support visits to identify the specific challenges teachers face, such as lack of teaching and learning materials or overcrowded classrooms, and take steps to address these issues through targeted resource allocation and infrastructure improvement.

5.4 Suggestions for further study

- i. Further research is recommended on the same topic in other districts, in order to enhance generalizability of the findings.
- ii. It is also suggested that a similar study should be done focusing on either Junior or Senior High Schools, this is because, this present study

used kindergarten schools in Nkwanta North district which is a small representation.

- iii. There is also need for further studies to establish the perception of learners toward the use of physical classroom to promote literacy learning in kindergarten schools in Nkwanta North district, Ghana.

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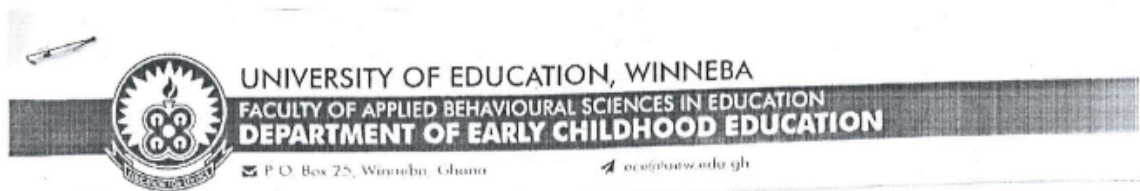
APPENDIX 1

LETTER OF INTRODUCTION

I am Abubakar Kwaku Kpachamgbe; a M.Ed. learner in the Department of Early Childhood Education, University of Education Winneba. I am conducting a research work on kindergarten teachers' use of physical classroom for literacy

activities in Nkwanta North district, Ghana. The information obtained from the responses of this questionnaire will be used for research purposes. Therefore, you are kindly requested to answer the question honestly and frankly. Your responses will be kept confidential.

Thanks for your assistance.



FABSE/DECE/L.1

12TH MAY, 2023

The District Director
Nkwanta North
Ghana Education Service
P. O. Box 97
Oti Region, Dambai

Dear Sir/ Madam,

INTRODUCTORY LETTER

I kindly write to introduce to you Mr. Abubakar Kwaku Kpachangbe with index number: 220016087 who is an M.ED. student at the Department of Early Childhood Education, University of Education, Winneba. He is in his final year and has to embark on his thesis on the topic: **"Kindergarten Teachers' use of Physical classroom Environment for literacy activities in Nkwanta North District, Ghana"**.

Mr. Kpachangbe is to collect data for his thesis, and I would be most grateful if he could be given the needed assistance.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read "Michael Subbey", is written over a circular stamp.

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



APPENDIX 11

QUESTIONNAIRE FOR KINDERGARTEN TEACHERS

INSTRUCTION TO RESPONDENTS

SECTION A

DEMOGRAPHIC DATA OF RESPONDENT

1. Sex: Male [☐] Female [☐]
2. Age: 25-30 [☐] 31-40 [☐] 41 and above [☐]
3. Level of Education: Diploma [☐] Bachelor's degree [☐] M.Phil. [☐]
4. How long have you been teaching? Less than 4years [☐] 4 - 8 years [☐] 8 - 12 years [☐] 12 years and above [☐]

SECTION B

CONDUCTIVE NATURE OF THE PHYSICAL CLASSROOM ENVIRONMENTS

Please use the rating scale below to tick the option of your choice. The following are the interpretations of the responses: SD – Strongly Disagree; D – Disagree; N– Neutral; A – Agree and SA – Strongly Agree.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5. The classroom layout is organized to support effective literacy activities.	☐	☐	☐	☐	☐
6. The classroom is equipped with sufficient educational materials for literacy learning.	☐	☐	☐	☐	☐
7. The lighting in the classroom is adequate for reading and writing activities.	☐	☐	☐	☐	☐
8. The classroom space is ample for learners to participate in literacy activities comfortably.	☐	☐	☐	☐	☐
9. The ventilation in the classroom supports a comfortable learning environment.	☐	☐	☐	☐	☐

SECTION C

HOW KINDERGARTEN TEACHERS UTILIZE THE PHYSICAL CLASSROOM ENVIRONMENT TO FACILITATE LITERACY ACTIVITIES

Please use the rating scale below to tick the option of your choice. The following are the interpretations of the responses: SD – Strongly Disagree; D – Disagree; N– Neutral; A – Agree and SA – Strongly Agree.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. Teachers effectively use the classroom layout to organize literacy activities.	☐	☐	☐	☐	☐
11. Teachers make good use of available learning materials to enhance literacy instruction.	☐	☐	☐	☐	☐
12. Teachers utilize the classroom space creatively for literacy-related activities.	☐	☐	☐	☐	☐
13. Teachers manage environmental factors such as lighting and ventilation to improve literacy learning.	☐	☐	☐	☐	☐

14. Teachers use visual aids and interactive materials effectively in literacy activities.	☐	☐	☐	☐	☐
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SECTION D

CHALLENGES KINDERGARTEN TEACHERS FACE IN USING THE PHYSICAL CLASSROOM ENVIRONMENT FOR LITERACY ACTIVITIES

Please use the rating scale below to tick the option of your choice. The following are the interpretations of the responses: SD – Strongly Disagree; D – Disagree; N– Neutral; A – Agree and SA – Strongly Agree.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15. Limited classroom space restricts the implementation of literacy activities.	☐	☐	☐	☐	☐
16. Insufficient educational materials hinder the effectiveness of literacy instruction.	☐	☐	☐	☐	☐
17. Poor lighting in the classroom affects the quality of literacy activities.	☐	☐	☐	☐	☐

18. High noise levels in the classroom disrupt literacy activities.	☐	☐	☐	☐	☐
19. Inadequate ventilation in the classroom impacts learners' ability to focus on literacy tasks.	☐	☐	☐	☐	☐

THANKS FOR PARTICIPATING!!!