UNIVERSITY OF EDUCATION, WINNEBA

INFLUENCE OF SCHOOL PHYSICAL ENVIRONMENT ON KINDERGARTENERS' LEARNING IN THE ABLEKUMA WEST DISTRICT

GLORIA SAKYIBEA AMFO-ASAMOAH
(220015958)

A Dissertation in the Department of Early Childhood Education, Faculty of Educational Studies, Submitted of the School of Graduate Studies on Partial Fulfilment of the Requirements for the Award of the Degree of Master of Education (Early Childhood Education) in the University of Education, Winneba

DECEMBER, 2023

DECLARATION

Student's Declaration

I, Gloria Sekyibea Amfo-Asamoah, declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my original work and has not been submitted either in part or whole for another degree elsewhere.

Signature: ……..……

Date: ……...……

Supervisor's Declaration

I certify that the preparation and presentation of this research was supervised by me in accordance with the guidelines for supervision of research laid down by the University of Education, Winneba.

Supervisor's Name: Oppong Frimpong (PhD)

Signature: ……..……

Date: ……...……

DEDICATION

To my sister and friend Mrs. Abena Aryee

ACKNOWLEDGEMENTS

I convey my heartfelt appreciation and gratitude to my supervisor, who offered invaluable knowledge, sage advice, insightful critiques and pushed me to excel. His assistance and support were immeasurable. His guidance and understanding have been very useful to me. My sincerest thanks also go to Michael Subbey, Dr. Frank Quansah, Prof. Hinneh Kusi, Dr.Mrs Patricia Mawusi Amos, My Principal Mrs. Florence Adjepong of Alpha Beta Education Centers for their advice and support throughout the programme. My thanks also go to Seth Badu, my brothers, and my mother Mrs Janet Amfo-Asamoah, for their unending prayers, well wishes, and steadfast support throughout my education. Finally, I would like to thank everyone who helped me realise my goal in many ways.

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ABSTRACT

The study sought to investigate the effect of school physical environment on kindergarteners' learning within the Ablekuma West District. The study employed a mixed-methods approach and the sample size was 113 early childhood teachers. Simple random sampling technique was used to select the sample size. The researcher used structured questionnaire to obtain data from the early childhood teachers. Data were analyzed using both qualitative and quantitative techniques. Descriptive statistics was done using Statistical Product for Service Solution (SPSS). Data were presented in frequency tables. The findings were discussed in line with the objectives under study. The study revealed that majority of kindergarten teachers in the Ablekuma West District believe that the nature of the environment experienced by kindergarteners to some considerable extent is not developmentally appropriate. It was evident from the study that teachers in Ablekuma West District believe that physical facilities promote learning of kindergarteners. The study identified that most of the instructional materials and equipment have insufficient, with majority of the schools having insufficient materials. The research suggests that the community and government should actively promote the involvement of Non-Governmental Organisations and other entities in supporting the enhancement of schools, particularly in improving amenities such as libraries, to enhance the teaching and learning process.The study also recommends that the government should allocate more resources for the improvement of capital infrastructure in kindergarten centres.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

It is widely agreed that education helps people to make a positive impact on their own lives, their communities, and the country as a whole (Mege, 2014). According to Iddrisu, Danquah, and Quartey (2017), kindergarten is, without a doubt, the cornerstone of education, and it is widely recognised as a basic human right in Ghana. It is an important component of human capital that contributes to a country's economic growth and development. As a result, kindergarten education is a critical subject that must be properly regulated (Mege, 2014).

According to Ajayi (2001), the school environment refers to factors within the school that impacts the teaching and learning process. Among the elements that might impact the teaching-learning process are instructional materials, classroom organisation, facilities, and human resources (Ajayi, 2001). Oppong Frimpong (2019), pointed out that the environment influences the quality of Early Childhood Education in schools.

Studies conducted by Obaki (2017) and Tapia-Fonllem et al. (2020), revealed that the extent to which Kindergarteners learn could be augmented depending on what the school environment offers to the learners and the teachers. A well-designed school is said to promote children's entire development. A well-maintained and safe physical environment of high-quality fosters positive attitudes and motivations related to students' ability to learn, academic achievement, and prosocial behaviour (National Center on Safe Supportive Learning Environments-US, 2020). Petriwskyj (2010), contended that creating a positive physical environment is necessary in order for

teachers to teach effectively and for learners to be engaged and receptive to learning. A sense of belonging can be impacted by artistic expression in schools with the placement of murals and visuals. There is also space for inclusivity when considering classroom accessibility for all gender identities (Alexander, Johnson, Leibham & Kelley, 2008). Not only are well-maintained facilities conducive to instruction and learning, but they are also critical for the learner's and staff's overall health and well-being. This includes low noise levels, routine trash removal, high indoor air quality, appropriate heating and cooling, access to clean water, and lack of overcrowding (Slutsky and Pistorova, 2010).

Internationally, Nyabando, and Evanshen (2022), claimed that a safe and orderly classroom environment, well-maintained school facilities, and a good school environment all have a big effect on how well children do in school and how well they do ultimately. For example, a study conducted by Baran et al. (2018), noted that the physical environment of a school could have an impact on student achievement and behaviour. The study further revealed that a safe and orderly school environment, as well as well-maintained school facilities, have a direct correlation to improved academic performance, enhanced social-emotional outcomes, and overall better functioning of students (Baafi, 2020).

In industrialised nations such as those in Europe, the United States of America and some countries in Asia, policies have been put in place to guarantee that most Kindergartens have all of the necessary physical facilities, instructional resources, and other factors that might contribute to a successful teaching-learning process (Okongo, Ngao, Rop, and Nyongesa, 2020). One of the most important components of the teaching and learning process is instructional materials, and textbooks are often the

most cost-effective way of enhancing academic attainment and increasing school efficiency (Psachropoulous and Woodhall, 1995).

In developing economies such as those in Africa and some parts of Asia, poor learning environments have always been identified as key factors that lead to poor performance in many schools (Davis, 2018). According to Akomolafe and Adesua (2016), this is due to the existing resources being overstretched in order to satisfy the rising enrollment. In a study conducted by Ali (2017), to investigate the relationship between the qualities of the physical school environment in relation to creating learning and teaching among the intermediate schools in Kuwait, it is study revealed that the quality of school buildings, spacious classrooms, seating layout, lighting conditions in classrooms, ventilation, availability and proper use of teaching and learning materials positively affected student learning. Beyond the direct effects of poor facilities on pupils' ability to learn, the combination of poor facilities, which create an uncomfortable and uninviting work environment for teachers, and frustrating behaviour by pupils, such as poor concentration, has an impact on Kindergarteners' learning and development (Morris, 2013; Mupa, and Chinooneka, 2015). The situation is not any different here in Ghana where several schools suffer due to lack of or inadequacy of physical facilities and instructional materials (Kutner et al., 2018). Effective teaching and learning may not be possible unless schools are sufficiently equipped with physical facilities and instructional resources. Class size has also been an issue that affects the learning and development of pupils in most schools in developing countries (Mupa and Chinooneka).

In Ghana, since the inception of Free Compulsory Universal Basic Schools (FCUBE), there has been increased enrolment which leads to overcrowding in classrooms making the work of the teacher difficult which goes in a long way to affect the learning and development of the pupils. In a study conducted by Osai, Amponsah, Ampadu, and Commey-Mintah (2021), to investigate teachers' experiences with overcrowded classrooms in the basic schools in Ghana, it was study revealed that torchers perceived their overcrowded classrooms as a very stressful learning environment. The study further revealed that the major reason for the overcrowding is the implementation of the Free Compulsory Basic Education Policy. Osai et al., further revealed that the situation has resulted in insufficient learning environments, safety and health concerns, limited contact between pupils and educators, disruptive behaviour, emotional and mental challenges for educators, increased workload and insufficient time in the classroom. Osai et al., further stated that working on teacher best practices in overcrowded classrooms was suggested to be helpful in helping teachers who find themselves in such circumstances.

School environmental factors such as availability of instructional materials, availability of physical facilities, class size and school location are factors within the school that may affect learning and development in schools within the Ablekuma West district. The increased need for well-prepared school environments for Kindergartners prompted the researcher to wonder if these environments have been appropriately built to fulfil the various requirements of Kindergartners in the Ablekuma West District, hence necessitating this study.

1.2 Statement of the Problem

The Government of Ghana's commitment to education is noted in a policy document of basic education improvement of 1996 which guarantees every learner the right to free and compulsory universal basic education (Acheampong, 2009). The Government has invested in education especially in public basic schools through the introduction of Free and Compulsory Universal Basic Education (FCUBE). These forms of investment include the provisional additional policies such as the introduction of the School Feeding Programme, Free School Uniforms and the Ghana Education Trust Fund (GETFund). The country's provision of free basic education is an effort by the government to increase access and retention of pupils in schools (Iddrisu, 2016). These measures are based on the rationale of the overall policy goal of achieving Education for All (EFA) and the Government's commitment to the attainment of Millennium Development Goals.

Despite efforts made by the Government of Ghana to ensure each child attends school by providing Free Basic Education, when the researcher made an informal visit to some schools in the Ablekuma West district it was observed that, the school environment is poor and seemed not to be supporting the learning among pupils in the Ablekuma West district. In Ablekuma West, some schools operate in substandard conditions, where teaching might take place outdoors, under trees due to a lack of proper classrooms. Moreover, existing classrooms might be old, run-down, and not conducive to effective learning. They may suffer from poor ventilation, insufficient lighting, and inadequate space for activities, inhibiting both teaching and learning experiences (UNESCO, cited in Oppong-Frimpong, 2019). The UNESCO (2010) report continues to indicate the inadequacy of classroom infrastructure, particularly in public schools.

Effective teaching-learning process may not be guaranteed if the school environment is not designed to foster children's growth and development in the district. If teaching-learning process is not improved, then the district will lag behind both in social and economic development in the long run. Clark & Steward (1987), opined that children demonstrate a higher level of cognitive skills and greater social competence in schools that are safe and orderly and contain a wide variety of stimulating learning materials and activities when compared to children in programs that lack these features.

The studies conducted by Ali (2017), Malik and Rizvi (2018), and Akomolafe and Adsua (2016) underscore the crucial impact of various factors within the school environment on the learning and development of pupils. While these studies contribute valuable insights, there exists a notable gap in the literature concerning the specific context of the Ablekuma West district, particularly regarding the influence of the school environment on Kindergarteners' learning.

To address this gap, the researcher aims to investigate the impact of the school physical environment on the learning experiences of Kindergarteners within the Ablekuma West District. This research seeks to fill this void by examining how specific aspects of the school's physical environment may contribute to or hinder the learning process for Kindergarteners in this district.

By conducting this study, the researcher aims to provide evidence-based insights that can inform educational practices and policies tailored to the local context of the Ablekuma West district. This investigation not only contributes significantly to the existing body of knowledge but also carries substantial practical implications for elevating the quality of early childhood education within the specific geographical context of the Ablekuma West district. The findings from this study have the potential

to inform targeted interventions, policies, and practices that cater to the unique needs of Kindergarteners in the local education system. By bridging the gap in research on the relationship between the school physical environment and Kindergarteners' learning outcomes in the Ablekuma West district, this study seeks to provide actionable insights for educators, policymakers, and stakeholders committed to fostering an optimal learning environment for young learners in this region.

1.3 Purpose of the Study

The purpose of the study was to investigate the influence of the school physical environment on kindergarteners' learning within the Ablekuma West District.

1.4 Research Objectives

The study sought to:

1. describe the nature of school environment experienced by Kindergarteners in the Ablekuma West district.
2. find out how physical facilities promote the learning of Kindergarteners in the Ablekuma West district.
3. assess how availability and sufficiency of instructional materials can promote the learning of Kindergarteners in the Ablekuma West district.

1.5 Research Questions

1. what kind of school environment is experienced by Kindergarteners in the Ablekuma West district?
2. how do physical facilities promote the learning of Kindergarteners in the Ablekuma West district?
3. how does availability and sufficiency of instructional materials promote learning of Kindergarteners in Ablekuma West district?

1.6 Significance of the Study

With the acknowledgement that the environmental setting of a school is a contributor to children's development and achievement outcomes, it is imperative for educators to make a conscious effort to make available materials in the school environment. It is hoped that the study would add to previous knowledge on the impact of the school environment on the total development and learning achievements of children.

Also, the study would lead to the upliftment of the image of the Kindergartens in the Ablekuma West district and the country at large. This is so because best practices in environmental settings would be highlighted and recommendation would be made to stakeholders in the educational enterprise.

Furthermore, it is hoped that, the findings of the study would form the basis of a solid foundation for kindergarten education in the country realizing the influence of the school environment on the development of Kindergarteners. The education directorate in the district as well as donor agencies need to be informed of the prevailing conditions of kindergarten settings and this would compel them to make efforts to put kindergartens high on their budgets and stop giving lip services to kindergarten education in the country.

1.7 Limitation of the Study

While the findings of this study provide valuable insights into the relationship between the school physical environment and kindergarteners' learning in the Ablekuma West District, caution should be exercised when extending these results to other districts or regions. Localized factors, unique to the Ablekuma West District, may limit the generalizability of the study. Also, The study's timeframe for data collection is subject to inherent limitations. Given the dynamic nature of educational

environments, the observations and conclusions drawn may be influenced by the specific period during which data were collected, potentially overlooking seasonal or temporal variations. Furthermore, the scope of the study is constrained by resource availability, including financial and technological limitations. A more extensive research approach or the inclusion of a broader range of schools might enhance the comprehensiveness of the findings. However, resource constraints have restricted the study to its current scope. The study, designed to capture a snapshot of the school physical environment and learning outcomes, may not fully account for the long-term effects. The dynamic nature of kindergarteners' development requires a more extended observation period to discern lasting impacts accurately.

1.8 Operational Definition of Terms

Influence: It refers to the positive and negative consequences or outcomes that the school physical environmental have on the teaching-learning process.

Physical Environment: It refers to the overall design and layout of a given classroom. In short, they are the factors within the school that impacts the teaching and learning process.

School: The educational setting for children between the ages of 4 and 5 years.

Kindergartener: Child attending kindergarten school.

1.9 Organisation of the Study

The study is organised into five chapters. Chapter one focuses on the introduction of the study. It discusses the background to the study, statement of the problem, purpose of the study and research objectives. It further discusses the research questions, significance of the study, delimitations of the study, operational definition of terms and organisation of the study. The chapter two presents the review of related

literature. Chapter three is devoted to the methodology used in divulging data from the respondents. It lays bare the research design, population of the study, sample and sampling techniques, data collection instrument and trustworthiness and credibility of the instrument. It also discusses the data collection procedure, data analysis and ethical considerations. Chapter four presents analysis of the data. Chapter five summarises the salient point raised in the entire study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Overview

The literature review part explores the viewpoints presented by different authors about the problem under investigation. Conducting research involves examining current literature to acquire the collected information within the specific area of interest. This stage is essential. The purpose is to uncover gaps in previous studies while broadening the total knowledge base for this research work.

Literature was reviewed under the following themes:

1. Theoretical framework
2. Concept of Kindergarten education
3. Concepts of school environmental factors and teaching-learning process
4. Nature of school environment experienced by Kindergarteners
5. How physical facilities promote learning among Kindergarteners
6. How sufficiency of instructional materials promotes the learning of Kindergarteners

2.1 Theoretical Framework

The study is underpinned by School Climate Theory. This theory was developed by Gregory, Cornell and Fan (2011) to explain the various elements of how leaners experience their school environment. The theory assumes that the interaction of varied factors creates a school learning environment in a school including the academic activities, safety, community and institutional environment that impact on the cognitive, behavioural and psychological development of learners. Thus, school climate, however it is formed, has both direct and indirect effect on learners' outcomes in the school (Gregory, Cornell and Fan).

In building the theory further, later researchers theorised elements of school climate that promote positive learner development. For instance, Wang and Degol (2015), borrowing from research on parenting styles and child development argued that authoritative school climate promotes positive learner development. They defined a positive school climate as one that offers a democratic atmosphere for learners to express themselves. Authorizing a democratic climate within the educational system involves employing leading indicators such as democratic disciplinary structures and providing warmth and support for learners. In this study, these indicators serve as benchmarks for an authoritative school climate. When applied to the current research, the concept of a school climate becomes synonymous with the school learning environment, encompassing diverse elements that impact learners' educational experiences directly and indirectly. Thus, by fostering a conducive learner learning environment within the school, it's anticipated that this will positively influence students' performance. Conversely, an inadequate or non-conducive learning environment could potentially hinder students' academic achievements. Thus, the focus lies on creating and maintaining an environment that supports and nurtures learning to optimize students' educational outcomes.

2.2 Conceptual Framework

Ogula (1998) defines conceptual framework as a description of the main independent and dependent variables of the study and the relationship among them. Independent variables are conditions or characteristics that are manipulated to ascertain the relationship and observers phenomenon. Dependent variables are conditions that appear to change as the independent variables are introduced or removed.

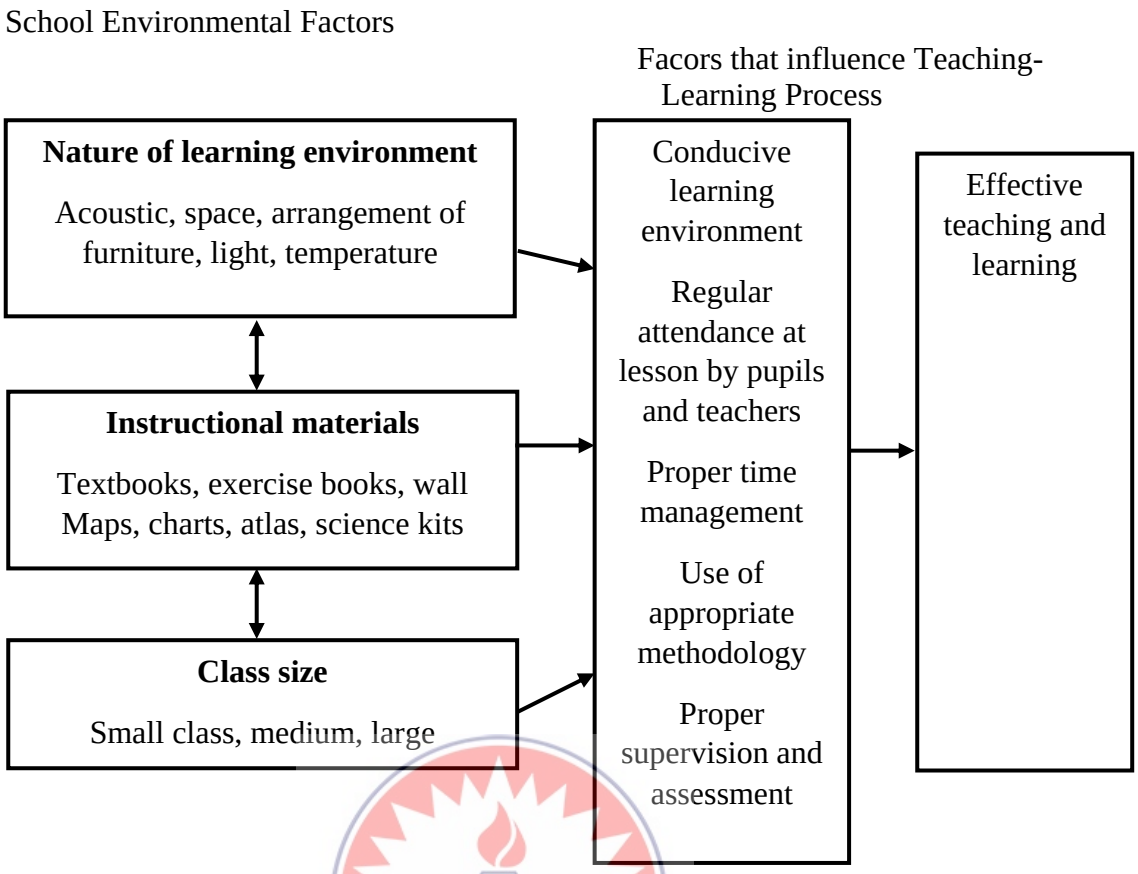

Figure 2.1: Relationship between school environmental factors and teaching-learning process

The conceptual framework shows the interrelationship between various school environmental factors thought to influence teaching–learning process. The framework postulates that the factors which influence the teaching-learning process include nature of the environment, instructional materials, class size and assessment of teaching-learning process. The impact can be adjusted by establishing a conducive learning environment, ensuring consistent attendance by both pupils and teachers, implementing effective time management practices, employing appropriate teaching methodologies, and conducting thorough supervision and assessment. These measures collectively contribute to fostering an environment conducive to effective teaching and learning outcomes.

2.3 Concept of Early Childhood Education

Early Childhood Education Early years in the growth of children are critical for the physical and physiological development, the stimulation of intelligence, personality formation and the instillation of positive social behaviour in children (Report of the President's Committee on Review of Education Reforms in Ghana, 2002). Early childhood is defined as the period from birth to eight years. It is a time of remarkable brain development where foundations are laid for subsequent learning (UNESCO, 2011).

It also refers to any organized educational provision outside of the home for children in the age range of one to seven years. Other frequently used terms include pre-school, early years, kindergarten, playgroup, nursery, pre-grade one, preparatory year, 'zero year' and many others (International Bureau of Education, 2006). According to the Regional Bureau for Education in Africa (BREDA), early childhood education refers to a holistic and integrated approach to health, nutrition, protection, and education needs and services (Regional Bureau for Education in Africa, 2010). The Working Group on Early Childhood Development which brings all the key stakeholders including international partners, governments, NGOs, experts and academics officially term early childhood education as Early Childhood Development (ECD).

In Australia, Early Childhood Education and Care (ECEC) services for children below school age are usually referred to as either child care, children's services or early childhood services. ECEC, therefore, includes the range of formal care and education services for children under school age and in the early years of school. According to the World Bank (2001), early child development includes services designed for the

physical and intellectual growth of children in their early years (ages 0-6). These services incorporate day care, pre-school, home visits by trained professionals, health and nutrition services, and parental education.

Bowman & Donovan (2010), states that Early childhood education does not refer to a single entity; rather, the term covers a variety of programmes for young children between birth and age 8. These programmes take place in children's own homes and in public schools, private pre-schools, and child-care homes and centres. Each of these settings may have quite different characteristics (adult/child ratios, group sizes, age ranges, cultural practices, and adult training and teaching styles) that in turn affect what and how children learn.

UNESCO (2011), indicates that the majority of children in early childhood education are between the ages of three and six years. In Ghana, pre-school education refers to the type of education given to children from ages 0 to five years, after which they enrol in the formal primary school (Report of the President's Committee on Review of Education Reforms in Ghana, 2002).

2.4 School Environmental Factors and Teaching-Learning Process

School environmental factors are those aspects within the pupils' surrounding at school that influence the process of teaching and learning. The school environment is an important aspect of educational planning. The quality of education not only depends on the teacher as reflected on performance of his or her duties, but also in the effective coordination of the school environment (Ajao, as quoted in Chuma, 2012). It is believed that a well-planned school will gear up expected outcomes of education that will facilitate good social, political and economic emancipation, effective teaching and learning process and academic performance of pupils (Adesina, 2011).

Everything within the school environment has an influence on the teaching-learning process.

In this study, physical facilities, instructional materials, class size and school location are some factors within the school environment that were found to have an influence on the process of teaching-learning hence the school environment remains an important area that should be studied and well managed to enhance pupils' academic performance (Ajayi, 2001).

2.5 Nature of Classroom Environment Experienced by Kindergarteners

In the school environment, factors such as acoustics, light, colour, temperature, and seat arrangement may improve or hinder learners' academic performance in classrooms (Apter, 2014). The most significant factors affecting the learning process are noise, temperature and seat arrangement. Besides, there is no current agreement on how some particular physical characteristics of classrooms affect learning outcomes. Moreover, research would be needed to draw more reliable conclusions (Lewinski, 2015).

2.5.1 Acoustics in the classroom as part of the school physical learning environment

Noise, in general, is well known to have an impact on human performance. Chiang & Lai (2008) investigated and identified adverse effects of working in a noisy room among young children. They guaranteed that noise impacts learning results, but also the health of the occupants. On account of little youngsters, they have not yet grown enough executive skills in exercises including correspondence channels, similar to discourse appreciation, utilisation of language, and composed and oral aptitudes (Mills, 1975). Subsequently, obstruction significantly interferes with the way toward

obtaining those fundamental limits in children, and clamour is a long way from the main conceivable sort of mediation. Clamour under-mines perusing, composing and cognisance aptitudes, just as generally speaking scholastic execution, as sound makes it difficult to concentrate on the assignment or tasks given (Di Sarno et al., 2002).

Chiang & Lai (2008) reviewed previous findings on noise's harmful effect on mental and physical wellbeing as part of their study. From a plethora of demonstrable impacts, the following adverse outcomes were reported in the context of a noisy room: getting tired quickly, leading to lower efficiency; increased heart rate; dyspepsia; poor appetite; insomnia; headache; tinnitus; and facial pallor. Zannin & Zwirtes (2009) compared the different recommended structures of schools erected amid 1977-2005. Their findings were in tandem with early researches which established that classrooms were not comfortable places to acquire knowledge or to be mentally focused at all time, due to noise interference.

Zannin & Zwirtes (2009), in their report, said that even if a standard and best design is selected, the results may be optimal for a pleasant learning environment. The study highlighted that the relative position of schoolyards and recreation spaces is often ill-conceived concerning the rest of the school. Besides, the architectural design and material choices allow for voice and noise to be carried between two adjoined classrooms and hallways.

Noise level is another critical issue when looking at how acoustics affect learners' performance. No internationally recognised norms on maximum noise levels for classrooms exist, but, for example, Brazil's regulatory body has mandated a maximum of 40 dB(A) (Zannin & Marcon, 2007). Conversely, one well-controlled

study of classroom noise levels revealed values over 40 dB(A) for each of five tested classrooms with open and closed windows.

Teachers and learners in the same study further pointed out that noise in the classroom was a significant reason for classroom distraction on learners. The study interviewed 62 teachers and 462 learners with specific questions on various acoustic aspects of classes. These interviews indicated that disturbing noise came mostly from other courses, especially during the adjournment of types. Both learners and teachers speak loudly.

2.5.2 Light in the classroom as a component of the school physical learning environment

The quantity and quality of light (illumination) undoubtedly influences the perception of comfort in a particular space. Lighting has reliable and well-documented effects, but less evident in the case of the quality of light (Basit, 2005). In a study to evaluate how different types of lighting affect learning, Boray et al. (1989) evaluated warm white, cold white, and full-spectrum fluorescent and how they affect cognitive performance, room attractiveness, judged room size, and pleasure of room. The findings from the study established that there were no significant differences among all dependent variables concerning lighting types used. The management was found to prefer warm white or cool white to full-spectrum light because of the cost attached to the two which is relatively cheaper to buy and maintain. It is assumed that more light always creates a better, more favourable impression in the classroom. Nonetheless, one study noticeably shows an upper limit to classroom lighting, above which the illumination has adverse effects. Kruger & Zannin (2004) surveyed in Brazil

comparing luminance in classrooms throughout several days in August year 2000. One room was equipped with light shelves while the other one was not.

Classes were on a similar side of the structure, and every single other variable was held constant. Curiously, these investigations demonstrated that rooms with light retire and without light retires condition had focal points and hindrances. During the late afternoon, windows with light shelves produced light below prescribed luminance, whereas windows without light shelves created high luminance values throughout the day, which can lead to gradual furniture and fixture damage and distract learners and teachers as well as increase thermal discomfort. This examination shows that even such element like light shelves may have some downsides.

2.5.3 Colour in the classroom as an aspect of school learning environment

Effects of exposing people to particular colours have always intrigued scientists. Colour most certainly affects our worldly experience. Seemingly, an ongoing debate concerns the peculiarly named colour "baker-miller pink", which is purported to lower stress and anxiety levels, as well as affecting physiological functions, for example, reducing blood pressure and pulse rate (Schauss, 1985; Profusek and Rainey, 1987; Bennett et al., 1991).

A study conducted by Gilliam and Unruh (1988) noted that the results of studies on baker-miller pink were incongruent with each other. Consequently, Gilliam and Unruh investigated the topic themselves, finding no significant differences between peoples' experience of and reactions to ordinary white walls and the more unusual baker-miller pink walls.

A study by Elliot et al. (2007), exposed participants to the colour red, green, or black before giving them a test. They found that exposure to red, even if participants were not consciously aware of the disclosure, impaired their academic performance. The effect was observed even when a number was written in red ink at the top of a sheet of paper. Greater right frontal hemisphere Electroencephalogram, which is a test that measures electrical activity in the brain. Hence, activation was observed when learners were exposed to red, which is consistent with similar findings of greater activation in right frontal relative to the left frontal cortex following exposure to the colour red. Another argument for the adverse effects of the colour red pertains to findings by Gimbel (1997) and Pile (1997), which are summarised in a table as part of their research paper. Notably, these authors have suggested that the colour green is best for schoolrooms. Gimbel and Pile in their study table, also have suggested the colours that might be responsible for specific learner behaviours, e.g., red—alert, increased pulse, activity; green-balance, judgment, arrested movement, stasis. However, Gifford (2007) argued that performance on mathematics and reading tests did not vary among learners who performed in classrooms with different coloured walls.

In a short review of how to design productive study environments, Stone (2001) highlighted the lack of a clear relationship between colour and mood (working from the assumption that feeling is unswervingly associated to performance). Grounded on a review of dozens of studies, Stone observed that if any relationship does exist, the most likely associations are red and yellow colours with stimulation and blue and green colours with calming effects. Stone also found that colour did have an impact on qualitatively different tasks (mathematics task versus reading assignment). The intensity of the surrounding environment affected performance on more difficult

tasks, i.e., the reading task. A further finding was that the lowest return on cognitively demanding tasks was in classrooms with red walls.

2.5.4 Classroom temperature and the school physical learning environment

Many dispute that temperature plays a vital role in how comfortable we are likely to feel when executing a task. Perhaps the supreme temperature is one that is hardly noticeable—neither too cold nor too hot. Unsurprisingly, the temperature of classrooms is another crucial influence that contributes to learners' performance. In a literature review of thermal quality and learners' learning, Earthman (2002) highlighted the existence of prime temperature ranges for optimal learning outcomes. Generally, research shows that temperatures between 68 and 74˚F—20 and 24˚C—are most conducive to comfort and, by extension, learning. Besides, 50% of relative humidity was found to be an acceptable value for classrooms (Earthman). There is an association between classroom temperature and acoustics. Classroom air conditioning systems may produce considerably uncomfortable noise.

2.5.5 Space and the school physical learning environment

Indoor and outdoor environments are arranged to encourage different types of play which are interesting, safe, appropriate and challenging for children. Appropriate space should be set aside for play. It should be big enough to allow for the free-ranging activities of a child in relation to her age and developmental progress (Maxwell & Evans, 2000). Play space should be safe and should also lend itself to exploration and investigation by the child. Creating public and private zones in child care spaces is complex and should be paid great attention to activity area in classrooms (Maxwell & Evans). Children need space where they can play with others but also smaller, quiet spaces for their own solitary activity, providing opportunities

for autonomy and independence but also a secure base to which they can return or retreat, as and when necessary. Indoor and outdoor places are both important. Children seek adventure and challenge in their play outdoors; they explore places and enjoy transforming spaces to create imaginary worlds (Tovey, 2007). The indoor space should be large enough to accommodate a desirable number of children. The centre's capacity is determined by space for indoor activities. It is computed based on the minimum space requirement per child, that is $3m^2$ of usable floor space, excluding services area (Child Care Division Ministry of Community Development, 2011).

2.5.6 Seating arrangement in the classroom and the school physical learning environment

We contend that the seat arrangement is a potent means to efficiently manipulate the physical characteristics of the school to ensure high performance of both learners and teachers. Douglas & Gifford (2001) research incorporated a lens model approach—a probabilistic representation of the way perceivers uses environmental cues to draw inferences about the environment, which was initially advanced by Brunswik (1956). Learners and teachers, who assess classroom physical characteristics, might not at first glance be related to issues of academic performance. However, Douglas & Gifford (2001), at the beginning of their study, the researchers modified a lens model to twinset their desires. Douglas and Gifford, explained how friendliness and overall preference, as described in the questionnaire. Kindness was defined as how warm, comfortable, etc., the room makes you feel in your own opinion. Overall preference was described as a global rating of all factors that is considered important to the classroom environment. Every member was shown two photos of 35 various classrooms, and she evaluated them on the scale just described. Surprisingly, only

three characteristics of the school explained between 40% and 57% of the variance in the evaluation of friendliness and overall preference by both learners and teachers. Some people preferred societal arrangements of seats. The concept of sociopetal agreement refers to arranging chairs and tables in a manner that encourages increased social interaction between university students and teachers. Additionally, two other important factors are providing a view of the outdoors and ensuring the seating is comfortable. Not surprisingly, the quality of seating was more significant for learners, as teachers tend to have comfortable seats owing to their higher status. Douglas & Gifford (2001) pointed out that users of classrooms did not rate highly such classroom properties as brightness, room size and aesthetic complexity.

The investigation of Douglas & Gifford (2001) offered no insight regarding how these various classroom properties are related, nor if they individually or together relate to the learning process. On the other hand, we argue that it is sensible to assume that physical characteristics famous for eliciting positive feelings and making people relaxed in the learning environment must be strongly correlated with the performance of the learners (Douglas & Gifford).

Studying in an appealing classroom, therefore, is far preferable to being in a school without social seating arrangements, a view to the outdoors, and comfortable seats. This assertion remains to be tested, however, Rosenfield et al., (1985), examined how desk and chair arrangement affected learners' behaviour. School going children in elementary classes were assessed according to their on-task expressions, such as hand-raising, discussion comment, questioning pupil request, listening, out-of-order comment, and speaking; and on their off-task behaviours, such as withdrawal, aggression and disruptive conduct. The dependent variables mentioned above were

clearly defined and measured by trained evaluators. The possible desk arrangements were clusters, rows, and circles. Results showed that learners seated in circles showed the most on-task behaviours. The second-best arrangement of desks and chairs was a cluster arrangement, and the least effective was desks arranged in rows. As expected, such variables as sex, age, and attitude toward studying affected learners' scoring too.

2.6 How Physical Facilities Promotes the Learning Among Kindergarteners

Without doubt, the quality of education is firmly linked to the effective coordination of the environment. It is believed that a well-designed classroom will not only help to achieve the expected learning outcomes of education but also ensures cordial learner-teacher relationship (Suleman & Hussain, 2014). The provision of sufficient learning facilities and instructional materials within suitable classroom atmosphere are some of the factors that improve the standard of education in schools.

Classroom physical environment is seen as the physical characteristics of classroom that involve different things like size of classroom, floor, walls, desks, lighting, school structure and school climate. According to Suleman and Hussain (2014), physical environment is the physical aspect of the learning setting. Moreover, physical facilities in the ideal classroom plays a vital role in composing a strategic factor in the operation and functioning of the teaching and learning as they determine the excellent performance of a school. Physical facilities are one of the stimulating factors that play a fundamental role in improving academic achievement in the school system (Basit, 2005).

The quality of the physical setting significantly affects the performance of the students. Physical facilities in classrooms ensure effective and successful teaching learning process. Without these facilities, effective teaching learning process cannot

be guaranteed (Turano, 2005). Learners tend to get more details from their instructors in a well facilitated environment and, therefore, they perform in a good way. On the other hand, if environment setting is not conducive, learners feel uncomfortable in classroom, then they tend to be giving divided or distracted attention to the lesson. Lyons (2001) opined that those poor facilities in school have negative impact on the teachers' effectiveness as well as students` performance.

Empirical studies on the classroom environment revealed that physical arrangement of the classroom has a significant role in teaching learning process. It can affect the performance of both the teachers and the students. Umar (2015) found that school environment as portrayed in the design, desks' arrangement and books availability in the classroom is firmly associated with the performance of learners in English language. Researchers like Lyons (2001), Taylor and Vlastos (2009) reported that classroom with large class size poses a difficult condition for students to focus and, therefore, minimize the duration teachers can use in actual instruction of learners. Chuma (2012) reported that crowd within a classroom delays teaching-learning process. This is because the teacher may not find it easy to move around the classroom to offer individualized attention to some students sitting in the rare angles of the classroom. Adequate and sufficient arrangement of classroom environment plays a significant role in enabling instructional process more effective and establishes an optimum atmosphere for both learners and the teachers (Ekundayo, 2018).

On a similar dimension, Asiyai (2014) reported that the classroom environment has a significant impact on the motivation and learning of learners including their engagement levels, academic performance, and overall attitude towards learning.

Maxwell (2016) also found that the learners` performance is connected to the building condition mediated by social climate and student attendance. Suleman & Hussain (2014) opined that a well-managed and vibrant classroom environment makes a positive impact on the academic performance of learners. Turano (2005) also reported that learners and teachers in conducive classroom environment tend to perform well. Suleman & Hussain (2014) examined effect of classroom physical environment and the performance of control and experimental groups. The findings revealed that the students of experimental group showed better performance as compared to the students of control group. Sang (2013) established that pupils text book ratio and the classroom size were the major contributors to poor performance in mathematics within pioneer zone. Umar (2017) found that classroom environment has strong influence on the academic performance of the students.

2.7 Adequacy of Physical Facilities and The Teaching-Learning Process

The image of a school is dependent on the quality of its infrastructure. The physical facilities of the school have a variety of effects on teachers, leaners and the teaching-learning process. Physical facilities in terms of adequacy and quality have been noted to have great impact on performance of learners. Woolner et al.(2007) found that presence of school library related significantly to achievement in Brazil, China, Botswana and Uganda. The library is an essential factor in the teaching-learning process. Tanner (2019) identified a library as an instructional resource which may significantly influence the teaching-learning process and eventually the performance of pupils.

Davis (2018) and Eshiwani (1993) agreed that school environment such as; classrooms, desks and books have a direct impact on good performance among the students in developing countries. Classrooms are a place that pupils spend the greatest part of their day. Wabuoba quoted in Chuma (2012) observed that overcrowding in classrooms make it difficult for pupils to write. Also, the teacher is unable to move around the class to assist needy pupils and this affects the teaching-learning process.

Crowded classroom conditions not only make it difficult for learners to concentrate but inevitably limit the amount of time teachers can spend on innovative teaching methods such as cooperative learning and group work. Strati (2015)noted that congestion within classrooms affects teaching-learning process. This is because the teacher may not be able to move around to give individual attention to all the pupils in need due to the high number of pupils in class. Tieso (2003) noted that in the United States of America, pupils who attend well maintained schools with good classrooms have a higher achievement than those who attend poorly maintained schools with poor classrooms. Schools with adequate facilities stand a better chance of providing education effectively. Ridings and Ward (1997) found that learner achievement was as much as 11 percentile points lower in substandard buildings as compared to above standard buildings.

2.8 Sufficiency of Instructional Materials and the Teaching-Learning Process

Availability of instructional materials is a core determinant in the successful implementation of any curriculum. The teacher should ensure there is proper selection and procurement of teaching-learning resources. According to Tieso (2003) the use of teaching resources is important because they motivate learners to learn as they offer stimulus variation and assist in sustaining learners' attention throughout the lesson.

Zins et al. (2007) asserted that even highly competent teachers find it difficult to teach effectively with inadequate facilities or if they are lacking the necessary instructional materials.

Slavin and Groff (2009) observed that instructional materials are crucial in planning and implementing a successful life skill program. The availability of learning resources is the most influential factor which may explain differing performance levels. It is generally assumed that the use of instructional materials leads to better performance. Appleton et al. (2008) in his study, found that the presence or absence of resources have an effect on teaching and learning.

Performance of learners is influenced by the availability of instructional materials and school facilities such as laboratories, libraries, textbooks, laboratory equipment among others (Eshiwani, 1993). The quality and adequacy of such equipment as, instructional materials have a direct bearing on quality of education as they determine how effectively the curriculum is implemented (Gislason et al., 2019). There is clear evidence that there is a relationship between adequate provision of books and achievement. Textbooks are often the most cost-effective means of improving academic achievement and increasing the efficiency of schools (Menon, 2016).

Lippman et al. (2009) pointed out that the quality of education the learners receive bears direct relevance to the availability or lack of instructional materials. Schools with adequate facilities such as textbooks and other instructional materials stand a better chance of having better results than poorly equipped ones. Textbook ratio should be one book per three pupils in lower primary and one book per two pupils in upper primary (Gislason et al., 2019). Sharing of these books may have an effect on

the teaching learning process since sometimes a pupil may be absent from school yet he/she had the book hence inconveniencing the colleague.

Sufficient quality and quantity resources and facilities determine how effectively the process of teaching and learning takes place. Tanner (2019) found that instructional materials such as textbooks, visual and audio materials not only enhance communication between teachers and learners but, also facilitate child centered learning through discovery. With the availability of text books pupils will be able to read on their own while at home and do their homework. Availability of good quality instructional materials is an important factor on pupils' achievement. Thus, a well-produced and easily available reference material is an important asset. Dirks et al. (2007) noted that no meaningful teaching-learning can take place without adequate instructional materials.

Baran et al. (2018) pointed that adequately well-prepared instructional materials determine the amount of learning that can take place in a learning institution. Good quality instructional materials can motivate interest, maintain concentration and make learning more meaningful. The studies above reveal that there is a relationship between availability of instructional materials and the teaching-learning process.

2.9 Summary of Literature Review

The reviewed literature shows that there are various school environmental factors which influence the teaching-learning process. This study investigated the nature of the environment, how the adequacy of physical facilities, sufficiency of materials influence the process of teaching and learning. Information on how learning environmental factors influence the process of teaching and learning in kindgerten centres in Ablekuma West District is scanty.

Previous studies conducted in Homa Bay district in southwestern Kenya, East Africa, by Davis (2018) identified that teachers' attitudes, the adequacy of teaching-learning resources, and girls' attitudes towards education were significant factors contributing to poor academic performance in learners. Ridings and Ward (1997) found that head teachers' style of management influences the performance of pupils. Strati (2015) discovered that the implementation of Free Primary Education (FPE) resulted in a notable rise in student enrollment within public primary schools. However, this surge in enrollment had an impact on overall academic performance, although the specific nature or direction of that impact was not explicitly mentioned in the statement. However, no study known to the researcher has been conducted in the Ablekuma West District on how the school environment can influence the teaching-learning process. To complement these studies, the researcher intended to find the influence between school environmental factors such as the nature of physical environment, the availability of physical facilities, availability of instructional resources has on the teaching learning process and make recommendations on how to improve them to ensure quality standards are maintained and consequently fill this gap.

CHAPTER THREE

METHODOLOGY

3.0 Overview

The methodology section serves as a comprehensive guide detailing the systematic approach taken in the research endeavor. It meticulously outlines the chosen research design, shedding light on the intricacies of the population under investigation, the meticulous sampling procedures employed, and the rationale behind the selection of specific research instruments. Furthermore, it provides a significance understanding of the step-by-step process involved in data collection, illustrating the procedures followed to gather valuable insights.

In addition to the aforementioned components, the methodology delves into the details of the data analysis methods employed, elucidating how the collected information was processed and interpreted to derive meaningful conclusions. It acts as a methodological roadmap, ensuring transparency and rigor in the research process while acknowledging any limitations or constraints encountered. The methodology, therefore, serves as a foundational framework, revealing the systematic journey undertaken to investigate and unravel the complexities of the chosen research topic.

3.2 Philosophical Underpinning

The positivist research perspective was the philosophy adopted for the study. Positivists believe that reality is out there and can be observed. The philosophy operates under the assumption that the object under study is observed “from a distance”. Thus, attempts are made to avoid human perceptions or manipulations. The result from the use of this philosophy is said to be objective and based on strict rules and procedures (Sarantakos, 2005). On the opposite side are the interpretivists

who believe that reality is in the minds of the people and is internally experienced. And that the meanings and interpretations people give to phenomenon are more important (Creswell, 2009).

3.3 Research Approach

Generally speaking, there are three types of research approaches namely, quantitative, qualitative and mixed methods. Quantitative studies are usually used in the natural sciences and are usually based on information that can be measured numerically (Leppink, 2016). It is the research approach, which is focused on the development of testable hypotheses (Howell, 2013) and theories (Bryman, 2008), which can be generalised across different fields. The quantitative approach places emphasis on the principle of reliability and statistical compartmentalization, as confirmed by Burns and Burns (2008).

Related to the positivist's philosophy is the use of the quantitative method of inquiry which was adopted for the study. With this method data is numerically described and represented. Survey method of inquiry was used for this study based on the research design which is descriptive. According to Creswell (2009), the survey method allows for the opinions or perceptions of a population, based on a sample to be collected through questionnaire. This buttresses Zikmund's (2003) assertion that surveys are usually used to collect quantifiable data which are examined, analyzed and findings reported. Therefore, the use of the quantitative method for this study is plausible.

Qualitative research approach depends upon systematic protocols and techniques, where subjective elements of the researcher could influence the findings and conclusions (Crotty, 1998). The basis of this kind of research is to understand why and how things (such as disease, health and illnesses) happen and not just about what,

where and when? This can be said are the reasons why qualitative research approach is most appropriate when conducting exploratory studies (Rahman, 2017). This is, because, it stresses on smaller units of samples rather than larger samples in order to assist a deeper study and analysis of the subject at stake (Leppink, 2016).

The mixed methods research focuses on collecting and analysing data by mixing both quantitative and qualitative approaches in a single study or series of studies (Creswell & Clark, 2011). Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone (Leppink, 2016). Scholars suggest that the research approach used, should accommodate the research objectives (Leppink ; Yin, 2017), skills of the researcher (Yin) and the type and quality of data to be collected (Jick, 1979). Since most of the research objectives of the present study are predictive-based, and the researcher seeking to collect large data that can be measured numerically, the quantitative research approach was adopted.

Among the many advantages of quantitative research approach is its ability to enhance speed of conducting research. Further, it offers broader coverage of a series of events, where statistics are combined from a larger sample (Amarantunga & Baldry, 2002). In addition, quantitative approach enhances the use of statistical data analysis methods, thus, making it easier to generalise the findings from the study (Creswell & Creswell, 2017). Furthermore, quantitative approaches take the guesswork to a more concrete conclusion. This is, because, the results are usually based on quantitative measures rather than mere interpretation and, therefore, enable future application and comparison with other works (Bryman, 2017).

3.4 Research Design

The research design used in this study was the descriptive sample designed. The descriptive design as pointed out by Gay (1992), involves collecting data in order to test hypothesis or answer questions concerning the current status of the subject of the study. Best and Kahn (2003) have argued that descriptive design is concerned with conditions or level of performance that exist, opinions that are held, process that is going on, effects that are evident or trends that are developing.

The selection of a descriptive design was considered suitable as the researcher aimed to portray certain aspects of the population. This involved choosing an impartial sample of individuals who were then invited to participate by completing questionnaires. Descriptive design was also chosen because in considering the purpose of the study, the research questions and the magnitude of the target population, it was the most appropriate design which could lead the researcher to achieve the purpose and to draw meaningful conclusions from the study.

3.5 Population

Target population is the total group of individuals from which the sample is drawn. The target population for this study was one hundred and sixty (160) kindergarten teachers from sixty (60) kindergarten schools in the Ablekuma West district.

3.6 Sample

In a sample survey, the researcher draws a sample from the population of interest and based on their responses generalisations are made about the population. This process involves careful consideration of various factors, such as the sampling technique employed, sample size, and the representativeness of the selected individuals. Through systematic data collection, statistical analysis, and interpretation of

responses, researchers can extrapolate findings from the sample to make reliable inferences about the characteristics, behaviors, or attitudes of the entire population.

Sample surveys are particularly valuable in situations where it is impractical or resource-intensive to collect data from every member of the population. By studying a well-chosen sample, researchers aim to capture the diversity within the population, allowing for a more efficient and cost-effective exploration of trends, patterns, or preferences that may exist on a broader scale **(**Babbie, 2016). However, the accuracy of generalizations depends on the careful design and execution of the survey, ensuring that the sample is truly representative of the larger population of interest.

3.7 Sampling Procedures

Sampling is a critical aspect of research design, shaping the foundation for the generalizability of study findings. In this specific study, a carefully chosen sample of 113 teachers was selected to participate in the questionnaire. The determination of this sample size was meticulously guided by the established principles outlined by Krecjie and Morgan (1970), offering a systematic and statistically sound approach to ensure the reliability and validity of the research outcomes.

To guarantee a representative and unbiased selection of participants, a simple random sampling technique was employed. This method involves each teacher in the population having an equal chance of being included in the sample. This randomness enhances the representativeness of the selected group and allows for the potential generalization of findings to the broader population of teachers. The process of simple random sampling was executed by employing a randomized approach to select teachers from the entire population. This technique minimizes the risk of systematic

biases in participant selection, contributing to the credibility of the study's findings (McLeod, 2014).

3.8 Research Instrument

A research instrument is a tool or device used by researchers to collect data systematically and gather information for a study **(**Creswell & Creswell, 2017). These instruments are designed to measure, observe, or record specific variables relevant to the research objectives. Research instruments can take various forms, including surveys, questionnaires, interviews, tests, observations, and physiological measurements.

3.7.1 Questionnaires

The Oxford Dictionary defined questionnaire as a set of printed or written questions with a choice of answers, devised for the purpose of a survey or statistical study. Questionnaires encompass a variety of instruments in which the subject responds to written questions to elicit reactions, beliefs and attitudes. Questionnaire is a widely used and useful instrument for collecting survey information, providing structured, and often numerical data, being able to be administered without the presence of the researcher and often being comparatively straightforward to analyze (Wilson and McLean, 1994). Questionnaires are very useful because they are often more economical than other data generation methods and also, a large amount of data can be created for low costs of material and time. Questionnaires were considered best for this study because; they are easy to administer to the respondents and convenient to collect information within a short period. Questionnaires, while advantageous in eliciting candid responses compared to interviews, may pose challenges for individuals with limited literacy skills or visual impairments. Additionally, there is a

potential for questionnaires to introduce bias, influencing respondents to align their perspectives with the researcher's viewpoint.

3.8 Validity of the Questionnaire

Validity of the questionnaire was established using face and content validity procedures. Face validity of the questionnaire was checked by giving the prepared instrument to the researcher's colleague students pursuing same programme (Master of Education, Early Childhood Education). The content validity of the questionnaire was confirmed by the research supervisor who examined the research questions alongside with each item of the instrument in order to determine whether the questionnaire actually measures what it was supposed to measure. Comments from the colleague students and the research supervisor on the questionnaire were used to effect the necessary corrections before the questionnaire was administered on participants in the main study.

3.9 Reliability of the Questionnaire

Reliability of the instrument was checked by using Cronbach alpha reliability coefficient. Cronbach alpha reliability coefficient was selected because it is a much more reliable way of checking the internal consistency of the instrument (Creswell & Creswell, 2017). In pilot testing the questionnaire, 30 teachers at the Early Childhood Centres at Ablekuma Central District were selected for the pilot testing. These teachers were selected because they have similar characteristics compared to those in the study area. After the pilot testing of the questionnaire, Cronbach alpha reliability coefficient value was calculated and a value of 0.75 was obtained. This was an indication that the questionnaire was reliable. This is because according to (Creswell

& Creswell, 2017) if a Cronbach alpha reliability coefficient value of 0.7 is obtained, then, the instrument is reliable.

3.10 Data Collection Procedure

The researcher obtained a letter of introduction from the Head of Department of Early Childhood Education (DECE). The letter spelt out the purpose of the study, the need for individual participation, anonymity as well as confidentiality of respondents' response. After establishing the necessary contact with the head teachers of the selected schools, permission was sought for the administration of the instrument. The researcher trained some assistants for the collection of the data to assist in the distribution of the instrument to the respondents so as to make the data collection easier and quick.

The assistants received training on effective communication with the respondents, ensuring they could provide essential information and clarify any inquiries. This training aimed to facilitate the collection of detailed and comprehensive information for the research. The researcher together with the research assistants explained the purpose of the study and procedure for responding to the questionnaire to the respondents. In order to ensure clarity of how the questionnaire would be completed, the researcher together with the research assistants administered the questionnaire to the respondents during regular school time. The researcher and the assistants used three weeks to distribute and collect the answered questionnaire. The respondents were given a minimum of a week to respond to the questionnaire because of how loaded the content was after which it was collected.

3.11 Data Analyses Procedures

Data analysis, a critical component of contemporary research, was conducted through a qualitative approach for this study. Rigorous checks were applied to the field-collected data to verify consistency and completeness. Subsequently,qualitative methods were employed in the analysis of the gathered data. Patton (2002) noted that analysis of the empirical data aims to make sense of massive amounts of data, reduce the volume of information, identify significant patterns, and construct a framework for communicating the essence of what the data reveals. The field data was collated, sifted through and edited in order to address questions that had been answered partially or not answered. For effective statistical presentation and analysis, the questionnaires were serially numbered to facilitate easy identification. Responses to the various items in the questionnaires were then added, tabulated and statistically analysed.

After editing and coding, the data from the questionnaire were entered into the computer using the Statistical Product for Service Solutions (SPSS Version 22.0) software. Before performing the desired data transformation, the data was cleaned by running consistency checks on every variable.

3.12 Ethical Consideration

Research ethics refer to the correct rules of conduct necessary to adhere to carrying out research. Researchers have a moral responsibility to protect participants from harm (Mcleod, 2015). The researcher addressed all ethical concerns which include informed consent, anonymity and confidentiality.

The researcher obtained informed verbal consent from respondents before commencement of the data collection. The respondents were made aware that their

participation is voluntary, and that they are free to decline or accept or decline to engage in the research.

Anonymity of participants was also highly taken into consideration in this study. Research indicates that anonymity is a vital issue in research ethics because it gives the participants the opportunity to have their identities concealed (Bulmer, 2001). Codes were also adopted where necessary to ensure anonymity. In order not to unnecessarily invade the privacy of participants, the researcher made prior visits to schools before the data collection commenced. Neither names nor any identifiable information from respondents was taken as a way of ensuring the anonymity of participants.

On the issue of confidentiality, efforts were made to maintain confidentiality of the responses of the participants. Participants were told that their responses would be kept confidentially and that no one known to them would have access to the information provided and none of the respondents' names would be recorded in the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Overview

This chapter presents the results of the analysis of the questionnaire data based on the purpose of the study. The purpose of the study was to investigate the influence of school physical environment on kindergarteners' learning within the Ablekuma West District. The analysis and interpretation of data were carried out based on the results of the three (3) research questions formulated for the study. The analysis was based on the 94% return rate data obtained from 106 teachers for the study. This implies that out of the targeted sample of 113, a total of 106 questionnaires were retrieved for the study. The quantitative data were analysed using descriptive statistics (means, standard deviations, frequencies, and percentages). The first part of this chapter describes the demographic characteristics of the respondents (private and public early childhood teachers). The obtained data on the demographics were analysed using frequencies, and percentages. In the second part, the research findings are presented based on the data collected on the research questions formulated for the study.

4.1 Background Information of Respondents

This section deals with the analysis of pertinent issues related to the respondents' demographic characteristics. These include the distribution of respondents by gender, age range, area of specialization, professional qualification, rank in GES, and number of years served as a teacher.

Table 4.1 depicts the proportion of the respondents by various categories such as gender, age, area of specialisation, rank in GES, and the number of years served as a Kindergarten teacher.

Table 4.1: Background Profile of Respondents

		Frequency	Percent
Gender	Male	11	10.4
	Female	95	89.6
Total		**106**	**100**
Age	21 - 30 years	13	12.3
	31 - 40 years	29	27.4
	41 - 50 years	45	42.5
	51 - 60 years	19	17.8
Total		**106**	**100.0**
Area of Specialization	Early Childhood Education	67	63.2
	Basic Education	31	29.3
	Special Education	5	4.7
	Guidance and counselling	3	2.8
Total		**106**	**100**
Professional Qualification	Certificate	1	0.9
	Diploma	27	25.5
	Bachelor's degree	76	71.7
	Master's degree	2	1.9
Total		**106**	**100.0**
Rank	Superintendent I	1	0.9
	Superintendent II	1	0.9
	Senior Superintendent II	5	4.7
	Senior Superintendent I	30	28.3
	Principal Superintendent	37	35.0
	Assistant Director II	25	23.6
	Assistant Director I	7	6.6
Total		**106**	**100.0**
Years in Service	0 – 5 years	21	19.8
	6 – 10 years	31	29.3
	11 – 15 years	25	23.6
	16 – 20 years	24	22.6
	21 years and above	5	4.7
Total		**106**	**100.0**

Source: Field Survey, 2022

In the gender category, the data reveal that male teachers constitute 11(10.4.7%) of the respondents which resulted in female teachers accounting for 95(89.6.3%) of the

respondents. This indicates that females constituted the majority of the population. This survey's findings were influenced by the views of more female kindergarten instructors than male kindergarten teachers. Since no comparison was made with respect to male and female teachers, the outcome did not affect the study since the questionnaire was not gender-specific.

With regards to the age of the respondents, the data revealed that (12.3%) of the respondents were between the ages of 21 to 30 years; 29(27.4%) of them were between 31 to 40 years; most respondents 45(42.5%) of the respondents were within the ages of 41 to 50 years, and 19(17.8%) were within the age group of 51 to 60 years. By implication, the results mean that most of the teachers were within the active working group. Although, the large size of teachers with the ages of 31-40 years did not affect the results since no comparison was made on age distribution of the respondents.

Data in Table 1 further show that 67(63.2%) of the teachers were specialized in early childhood education; 31(29.3%) of the teachers were specialized in basic education; 5(4.7%) of the teachers were specialized in special education while 3(2.8%) were specialized in guidance and counselling. The implication for teachers who specialised is the majority of teachers (63.2%) being specialized in early childhood education indicates a focus on foundational education. This emphasizes the significance of expertise in the developmental stages crucial for laying the groundwork for future learning.

Again, it is shown that 1(0.9%) of the respondents possess a certificate in teaching; 27(25.5%) of them had a diploma; 76(71.7%) of them had a bachelor's degree and finally, the rest 2(1.9%) of them had a master's degree. Hence, the implication is the

low percentage (0.9%) of respondents with teaching certificates might suggest that formal education degrees are more prevalent and valued in the teaching profession. This could indicate a shift towards recognizing higher academic qualifications in the field.

Furthermore, in relation to the rank in GES, the result showed that 37 (35.0%) of the respondents belonged to the principal superintendent rank; followed by about 30 (28.3%) of them were senior superintendent I; 25(23.6%) of them were assistant director II; 5(4.7%) of them were senior superintendent II; 1(0.9%) of them were superintendent I and finally, 1(0.9%) of them were superintendent II. Hence, the implication is that the distribution across different ranks in GES highlights the diverse levels of experience and responsibilities among the teachers. A significant proportion being in the principal superintendent rank (35.0%) indicates a substantial leadership presence, potentially influencing administrative and educational decisions.

In addition, the data based on the number of years in service as a teacher show that 31(29.3%) served for at most 10 years; 25(23.6%) of them served as teachers for about 11 to 15 years; 24(22.6%) of them served between 16 to 20 years; 21(19.8%) of them had served between 0 to 5 years and finally, the rest 5(4.7%) of them had served as teachers for about 21 years and above. The results imply that most of the teachers had been in the service for a quite number of years and could provide the needed information for the study. Nevertheless, the large size of the teachers had taught for 6-10 years but did not affect the results there was no comparison on years in service.

4.2 Research Question 1: What kind of school environment is experienced by Kindergarteners in the Ablekuma West District?

This research aimed to investigate the nature of the school environment that kindergarteners experience in the Ablekuma West District. To achieve this, respondents were presented with statements related to the school environment for kindergarteners. They were then asked to express their level of agreement or disagreement with these statements, ranging from strongly agree to strongly disagree. This survey methodology was employed to gauge and understand the perceptions of respondents regarding the school environment for kindergarteners in the specified district The study employed the Relative Importance Index (RII) to assess the significance of statements concerning the physical learning environment in kindergarten classrooms within the study area. This involved calculating the RII for each statement using the provided formula. The aim was to identify and prioritize the most important aspects related to the classroom environment for the learning experiences of kindergarten children in the specified location. The relative important index is calculated for each of the statements using the formulae below

Relative Importance Index = $\frac{5n_5+4n_4+3n_3+2n_2+1n_1}{A*N}$ where

n_5 = number of the respondent for “strongly agree”

n_4 = number of the respondent for “agree”

n_3 = number of the respondent for “not sure”

n_2 = number of the respondent for “disagree”

n_1 = number of the respondent for “strongly disagree”

A = highest weight (5)

N = total number of respondents (106)

Table 4.2: Kind of School Environment Experienced by Kindergarteners

Statement	SA	A	N	D	SD	RII	Rank
Classroom is close noise polluted area	6 (5.6%)	7 (6.6%)	8 (7.5%)	34 (32.1)	51 (48.1%)	0.82	5
Noise impacts learning results in the classroom	6 (5.6%)	7 (6.6%)	8 (7.5%)	37 (35.0%)	48 (45.3%)	0.817	4
There is sufficient natural light in the classroom	68 (64.2%)	29 (27.4%)	2 (1.9%)	5 (4.7%)	2 (1.9%)	0.84	3
Natural in the classroom is complemented with adequate artificial light	53 (50.0%)	24 (22.6%)	0 (0.0%)	25 (23.6%)	6 (5.7%)	0.85	2
Classroom is well decorated with colourful materials	23 (21.7%)	32 (30.2%)	0 (0.0%)	24 (22.6%)	27 (25.5%)	0.81	6
Classroom is well ventilated	89 (84.0%)	13 (12.3%)	0 (0.0%)	3 (2.8%)	1 (0.9%)	0.853	1
Space for learners' free movement inside them classrooms	72 (68.0%)	17 (16.0%)	0 (0.0%)	15 (14.1%)	2 (1.9%)	0.67	9
There are enough learning centres	15 (14.1%)	18 (17.0%)	0 (0.0%)	46 (43.4%)	27 (25.5%)	0.76	8
There is a place for learners' naps/sleeping	8 (7.5%)	11 (10.4%)	0 (0.0%)	18 (17.0%)	69 (65.1%)	0.78	7
There are enough furniture	93 (87.7%)	3 (2.8%)	0 (0.0%)	7 (6.6%)	3 (2.8%)	0.66	10
Furnitures are developmentally appropriate	67 (63.2%)	23 (21.7%)	0 (0.0%)	5 (4.7%)	1 (0.9%)	0.64	11

Source: Field Data, 2022

Key- SA= Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

The data in Table 4.2 show that majority of the kindergarten teachers have a positive perception of the nature of the physical learning environment experienced by kindergarten children. The statements that favour the closeness of classroom to noise-polluted area was mostly disagreed on by the teachers in the Ablekuma West District. out of a sample of 106 kindergaten teachers, 6 (5.6%) strongly disagreed and 7 (6.6%); 8 (7.5%) remained neutral while 34 (32.1%) and 51 (48.1%) disagreed and strongly disagreed respectively. On the second statement, 6 (5.6%) strongly agreed and 7 (6.6%) agreed, this makes a total of 13 (12.2%) of the total respondent who agreed that 'noise impacts learning results in the classroom'. Eight (7.5%) were uncertain of the statement, 37 (35.0%) disagreed to the statement while 48 (45.3%) of the respondents strongly disagreed to the statement.

On the statement that 'There is sufficient natural light in the classroom', 68 (64.2%) strongly agreed and also 29 (27.4%) agreed to the statement, 2 (1.9%) remained neutral and 7 (6.6%) disagreed. Also, on the fourth statement that 'Natural light in the classroom is complimented with adequate artificial light', 53 (50.0%) strongly agreed and also 24 (22.6%) agreed to the statement, while 25 (23.6%) disagreed and 6 (5.7%) of the teachers strongly disagreed with the statement. This means that majority of the teachers agree that there is artificial light which compliments the natural light in their classroom. Also, most of the teachers agreed to the statement that the "classroom is well decorated with colourful materials". Out of a sample of 106 teachers, 23 (21.7%) strongly disagreed and 32 (30.2%) agreed to the statement whiles 24 (22.6%) and 27 (25.5%) strongly disagreed to the statement. Also, majority of the teachers agreed to the statement that "Classroom is well ventilated". Out of a sample of 106 teachers, 89 (84.0%) strongly agreed and also 13 (12.3%) agreed with the statement" and 4 (3.7%) of the respondent disagreed to the statement.

Further, on the statement that "Space for learners' free movement inside classroom", 72 (68.0%) strongly agreed and 17 (16.0%) agreed. 15 (14.1%) disagreed while 2 (21,9%) strongly disagreed to the statement. On the statement that "there are enough learning centres", 15 (14.1%) of the teachers strongly agreed and 18 (17.0%) agreed while 46 (43.1%) disagreed and 27 (25.5%) of them strongly disagree. On the statement that "There is a place for learners nap/sleeping", 8 (7.5%) of the teachers strongly agreed to the statement and 11 (10.4%) agree to the statement. However, 18 (17.0%) disagreed to the statement and 69 (65.1%) strongly disagreed to the statement. Again, on the statement that "there are enough furnture" 93 (87.7%) of the teachers strongly agreed to the statement and 3 (2.8%) agrees with the statement. However, 7 (6.6%) disagreed with the statement and 3 (2.8%) strongly disagreed to the statement. Lastly, on the statement that "Furniture are developmentally appropriate" 67 (63.2%) of the teachers strongly agreed to the statement and 23 (21.7%) agreed to the statement. However, 5 (4.7%) disagreed to the statement while 3 (0.9%) strongly disagreed to it.

The result so far shows that majority of the kindergarten teachers in the Ablekuma West district believe that the nature of the environment experienced by kindergarteners to some considerable extent is not developmentally appropriate. The study further used relative important index to ascertain the level of importance the respondents place on each of the statements concerning the kind of environment experienced by the kindergarteners. It was realized that the teachers place more on the following statements on the classroom physical learning environment of the kindergarten child in the study area : (1) "Classroom is well ventilated" (2) "Natural in the classroom is complemented with adequate artificial light", (3) "There is sufficient natural light in the classroom", (4) "Noise impacts learning results in the

classroom", (5) "Classroom is close noise polluted area" and among others, in order of importance.

4.3 Research Question Two: How do physical facilities promote the learning of Kindergarteners in the Ablekuma West district?

This section examines how physical facilities promote the learning of kindergarteners in the Ablekuma West district. The respondents were introduced to 8-item statements on how physical facilities promote the learning of kindergarteners and on a scale of strongly agree, agree, not sure, disagree and strongly disagree, they were to respond to each statement. The result is presented in Table 3.

Table 4.3 displays the responses to a series of statements regarding how physical facilities promote learning of kindergarteners using a Likert scale which ranges from 1 being strongly disagreed (SD); 2 being disagreed (D); 3 being neutral (N); 4 being agreed (A) and 5 being strongly agreed (SA).

Table 4.3: How Physical Facilities Promote Learning of Kindergarteners

Statement	SD	D	N	A	SA
Well-designed classroom ensures cordial teacher-learner relationship	0	0	0	35 (33.0%)	71 (67.0%)
Classroom physical facilities play a fundamental role in improving learning achievement in the school system.	0	0	0	37 (35.0%)	69 (65.0%)
Teaching and learning take place effectively where learners and teachers are physically comfortable	0	0	0	8 (7.5%)	98 (92.3%)
Well-lit classroom creates a better, more favourable impression for learning	0	0	0	17 (16.0%)	89 (84.0%)
Well-ventilated classroom promotes children's learning	0	0	0	28 (26.4%)	78 (73.6%)
Classroom temperature plays a vital role in how comfortable learners feel when executing a task.	0	0	0	31 (29.2%)	75 (70.8%)
Well-arranged desks and chairs positively influence and enhance the learning process in the classroom.	0	0	0	14 (13.2%)	92 (86.8%)
safe and noiseless classroom has a higher learning motivation	0	0	0	19 (17.9%)	87 (82.1%)

Source: Field Data, 2022

Key- SA= Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

The data in Table 4.3 reveal that 35 of the respondents which represent 33.0% and 71 of them representing 67.0% respectively either strongly agreed or agreed to the statement that "well-designed classroom ensures cordial teacher-learner relationship". None of the respondents disagreed to the statement. Also, the data reveal that 37 of the respondents which represent 35.0% and 69 of them representing 65.0% either strongly agreed or agreed respectively to the statement that "Classroom physical facilities play a fundamental role in improving learning achievement in the school system.". None of the respondents disagreed to the statement

Similarly, the data reveal that 8 of the respondents which represent 7.5% and 98 of them representing 92.3% respectively either strongly agreed or agreed to the statement that "teaching and learning take place effectively where learners and teachers are physically comfortable". None of them disagreed to the statement. Again, the data shows that 17 of the respondents representing 16.0% agreed to the statement "well-lit classroom creates a better, more favourable impression for learning" whereas, 89 of them representing 84.0% strongly agreed to the statement. Similarly, the data reveal that 28 of the respondents representing 26.4% of the agreed that "Well-ventilated classroom promotes children's learning", whereas 78 of them representing 73.6% strongly agreed to this statement. None of the respondents neither stayed neutral nor disagreed with the statement. Moreover, the data reveal that 31 of the respondents representing 29.2% rated the statement "classroom temperature plays a vital role in how comfortable learners feel when executing a task." as agreed whiles 75 of them representing 70.8% rated it as strongly agreed. None of the respondents disagreed to the statement.

In addition, the data reveal that 14 of the respondents representing 13.2% agreed to the statement that "Well-arranged desk and chair improve learning process in the classroom", whereas, 92 of them representing 86.8% strongly agreed to this statement. None of the respondents disagreed to the statement. Also, it could be seen in Table 3 that 19 of the respondents representing 17.9% agreed to the statement "safe and noiseless classroom has a higher learning motivation", while, 87 of them representing 82.1% strongly agreed to the statement. The inference from the data is that the early childhood teachers believe good environmental conditions contribute and promote learning at the kindergarten level.

4.4 Research Question Three: How does sufficiency of instructional materials promote learning of Kindergarteners in Ablekuma West district?

This section examined how physical facilities promote the learning of kindergarteners in the Ablekuma West district. The respondents were introduced to 8-item statements on how physical facilities promote the learning of kindergarteners and on a scale of, very sufficient, sufficient, fairly sufficient, insufficient, not available they were to respond to each statement. The result is presented in Table 4.4 below.

Table 4.4: How sufficiency of instructional materials promote learning of Kindergarteners.

Instructional Material	VS		S		FS		I		NA	
	F	%	F	%	F	%	F	%	F	%
Text books	-	-	-	-	18	17.0	87	83.0	-	-
Exercise books	-	-	45	42.5	53	50.0	8	7.5	-	-
Chalk/markers	-	-	106	100	-	-	-	-	-	-
Chalkboard/Whiteboard	106	100	-	-	-	-	-	-	-	-
Wall charts	-	-	-	-	22	20.8	84	79.2	-	-
Supplementary Books	-	-	-	-	-	-	106	100	-	-
Counters	-	-	-	-	79	74.5	27	25.5	-	-
Flashcards	-	-	-	-	59	55.7	47	44.3	-	-
Teacher's guide	-	-	-	-	-	-	106	100	-	-
Learner's guide	-	-	-	-	-	-	106	100	-	-
Radio	-	-	-	-	-	-	7	6.6	99	93.4
Television	-	-	-	-	-	-	3	2.8	103	97.2
Computers	-	-	-	-	-	-	12	11.3	94	88.7
Manipulatives	-	-	-	-	21	19.8	85	80.2	-	-

Source: Field Data, 2022

Key-VS=Very Sufficient, S=Sufficient, FS=Fairly Sufficient, I=Insufficient, NA=Not Available

Table 4.4 present data on how sufficiency of instructional materials promote learning of kindergarteners. The data reveal that 18 of the teachers representing 17% pointed

out that tesxbooks were fairly sufficient at their centres whiles the remaining 87 teachers representing 83% pointed out that they have insufficient textbooks. The data highlights a significant disparity in the perception of textbook sufficiency among teachers. For the 18 teachers (17%) who consider textbooks fairly sufficient, these instructional materials likely serve as valuable resources for structured content delivery, lesson planning, and student engagement. Textbooks, when adequate, can act as comprehensive guides, aiding teachers in maintaining a well-structured curriculum and providing students with essential learning materials. Conversely, the 87 teachers (83%) indicating insufficient textbooks could face challenges in delivering well-rounded lessons. Insufficiency in textbooks may limit the variety of teaching materials, hinder the diversification of instructional approaches, and potentially impede students' access to crucial information. This could have implications for the comprehensiveness of lessons and the ability to cater to diverse learning needs.

Again, he data indicates varying perceptions among teachers regarding the sufficiency of exercise books. For the 45 teachers (42.5%) who believe there are sufficient exercise books, these materials likely contribute positively to the learning process. Adequate exercise books allow for regular practice, homework assignments, and reinforcement of lessons. This can enhance students' understanding, offer opportunities for independent learning, and support the development of organizational skills. Similarly, the 53 teachers (50%) who perceive exercise books as fairly sufficient suggest a moderately positive view. While not completely deficient, there might be room for improvement in terms of quantity or accessibility. Fair sufficiency implies that exercise books are available but may require attention to ensure every student has consistent access to these essential learning tools.

For the 8 teachers (7.5%) who believe there are insufficient exercise books, this perception raises concerns about potential limitations in supporting students' individual learning needs. Insufficiency in exercise books may hinder effective practice, homework completion, and personal study, potentially impacting the overall learning experience. Also, the data reveal that all the respondents believed there are sufficient chalks and markers. Again, the data reveals that all the respondents believed there are very sufficient chalkboards.

Furthermore, the data shows teachers representing 20.8% of the respondents perceive wall charts as fairly sufficient. This group likely acknowledges the potential of visual aids in enhancing the learning process for kindergarteners. Fair sufficiency suggests that these educators have access to some visual resources, which can play a crucial role in stimulating interest, reinforcing lessons, and accommodating diverse learning styles. On the other hand a significant majority, comprising 79.2% of teachers, believes that wall charts are insufficient in kindergarten centers. This collective perception raises concerns about potential limitations in visual learning opportunities. Insufficient visual aids may hinder the variety and effectiveness of visual stimuli available for young learners, impacting engagement, comprehension, and their overall learning experience.

Also, among teachers, 74.5% believe there are fairly sufficient counters. This indicates a positive perception of the availability of hands-on learning resources. Fair sufficiency in counters suggests that teachers recognize the importance of manipulatives in early childhood education. These materials can enhance understanding, particularly in subjects like mathematics, by providing tangible experiences that support abstract concepts. However, 22.5% of teachers perceived

counters as insufficient. This minority viewpoint signals a potential challenge in providing adequate hands-on learning opportunities. The scarcity of counters may hinder the development of essential mathematical concepts through interactive and tangible experiences, impacting the overall quality of early childhood education.

Again, a majority of teachers, 55.7%, believed there are fairly sufficient flashcards. This positive perception implies that a substantial number of teachers recognized the value of flashcards in promoting memory retention, quick recognition, and reinforcement of concepts, contributing positively to the learning process. However, 44.3% of teachers believed there is an insufficiency of flashcards. This viewpoint raises concerns about the potential limitations in visual aids for reinforcing key concepts. Insufficient flashcards may impact the effectiveness of memory-based learning strategies and the ability to provide diverse and engaging learning experiences.

Also, the unanimous agreement among all 106 teachers that there is an insufficiency of teacher's and learner's guides is noteworthy. This signals a critical gap in the availability of structured learning plans and guidance materials. Insufficient guides could hinder effective curriculum implementation, potentially impacting the overall coherence and effectiveness of teaching and learning activities.

Furthermore, a small percentage, 6.6%, of teachers stated that there were insufficient radios, while a significant majority, 93.4%, reported the absence of radios altogether. This indicates a potential challenge in providing auditory learning experiences for kindergarteners, impacting the incorporation of audio-based educational content in the curriculum. Again, a minimal 2.8% of teachers mentioned insufficient televisions, while a substantial 97.2% reported the complete absence of televisions. The lack of

televisions in kindergarten centers raises concerns about the limited availability of audio-visual content for instructional purposes, which can be valuable for enhancing visual and auditory learning experiences. Interestingly, 11.3% of teachers perceived insufficient televisions, and 88.7% reported no available televisions. This mixed perception suggests a potential discrepancy in the assessment of television resources, indicating a need for clarity and consistency in evaluating the availability of these audio-visual aids.

4.5 Discussion of Results

Although preschool settings have been around since the 1920s, the proper design of these environments has recently become a focal point of interest. the increase in the number of children attending kindergarten has prompted growing concern about the effect of the school physical environment on kindergarteners' learning. Previous research provided the foundation for the development of additional research in the area of early childhood education. It is important to understand the perception of the kindergarten teachers about conditions of the classroom physical environment; existing conditions of the kindergarten indoor physical learning environment and the facilities available; state of the teaching-learning resources, learning centres, type and nature of furniture, the print environment and ventilation of the indoor environment; and how the state of the facilities and conditions of the classroom physical environment promotes kindergarten children's learning. Key concepts previously studied by other researchers present unanswered questions that developed into this research topic.

The purpose of this study was to assess the influence of the schools physical environment on kindergarteners' learning Ablekuma West district. Specifically, it sought to answer the question: What kind of school environment is experienced by Kindergarteners in the Ablekuma West District? How do physical facilities promote the learning of Kindergarteners in the Ablekuma West district? How does sufficiency of instructional materials promote learning of Kindergarteners Ablekuma West district?

4.5.1 Nature of School Environment Experienced by Kindergarteners in the Ablekuma West District

The purpose of this research question was to find out the nature of the school environment experienced by kindergarteners in the Ablekuma West District. The result from the study revealed that the majority of the kindergarten teachers in the Ablekuma West district believe that the nature of environment experienced by the kindergarteners to some considerable extent is not developmentally appropriate.

The study further used a relative important index to ascertain the level of importance the respondents place on each of the statements concerning the kind of environment experienced by kindergarteners. It was realized that the teachers place more on the following statements on the classroom physical learning environment of the kindergarten child in the study area: "Classroom is well ventilated" "Natural in the classroom is complemented with adequate artificial light" "There is sufficient natural light in the classroom" "Noise impacts learning results in the classroom", "Classroom is close noise polluted area" and among others, in order of importance.

The results from the present study support the assertions of Zannin and Marcon (2007) who revealed that noise level is a critical issue when looking at how acoustics affect learners' performance. No internationally recognised norms on maximum noise levels for classrooms exist, but, for example, Brazil's regulatory body has mandated a maximum of 40 Decibel. One well-controlled study of classroom noise levels revealed values over 40 Decibel for each of five tested classrooms with open and closed windows (Zannin & Marcon, 2007). Teachers and learners in the same study further pointed out that noise in the classroom was a significant reason for classroom distraction on learners.

The results are further in line with the study of Basit (2005) which pointed that the quantity and quality of light (illumination) undoubtedly influences the perception of comfort in a particular space. Lighting has reliable and well-documented effects, but less evident in the case of the quality of light. Thus, positive outcomes are likely to occur if the child's early experience learning in classroom is with good lighting. The data also provide substantial support for the findings of Douglas and Gifford (2001), emphasizing that the arrangement of seats is a powerful method for effectively influencing the physical aspects of the school environment, ultimately contributing to the enhanced performance of both students and teachers.

4.5.2 How Physical Facilities Promotes the Learning of Kindergarteners in the Ablekuma West District

This research question was intended to find out how physical facilities promotes the learning of kindergarteners in the Ablekuma West District. Some of the questions included how well-designed classroom ensures cordial teacher-learner relationship; how classroom physical facilities play a fundamental role in improving learning

achievement in the school; how well-lit classroom creates a better, more favourable impression for learning, how well-ventilated classroom promotes children's learning, among others. The data show that physical facilities promote learning of kindergarteners**.** The findings lend ample support to the work of Suleman and Hussain (2014) which concluded that it is believed that a well-designed classroom will not only help to achieve the expected learning outcomes of education but also ensure cordial learner-teacher relationship. The provision of sufficient learning facilities and instructional materials within a suitable classroom atmosphere are some of the factors that improve the standard of education in schools.

The findings of this current study also support the findings of Suleman and Hussain (2014) which revealed that physical facilities in the ideal classroom play a vital role in composing a strategic factor in the operation and functioning of teaching and learning as they determine the excellent performance of a school. Thus, learners tend to get more details from their instructors in a well-facilitated environment and, therefore, they perform in a good way. On the other hand, if the environment setting is not conducive, learners feel uncomfortable in the classroom then they tend to be giving divided or distracted attention to the lesson.

4.5.3 Sufficiency of Instructional Materials Can Promote the Learning of Kindergarteners in the Ablekuma West District

The purpose of this research question was to examine how the sufficiency of instructional materials can promote the learning of kindergarteners in the Ablekuma West District. Most of the instructional materials and equipment are insufficient, with a majority of the schools having insufficient materials. The scarcity of essential resources adversely affects the quality of the teaching-learning process, creating an

environment where Kindergarteners may encounter obstacles in their educational journey. The impact of inadequate instructional materials extends beyond the immediate constraints of the classroom. It heightens the vulnerability of children to potential academic setbacks, including increased dropout rates, higher instances of grade repetition, and a heightened likelihood of poor academic performance. The scarcity of materials hinders educators' ability to create dynamic and engaging lessons, limiting the variety of instructional methods and learning experiences available to kindergarteners(Smith & Blake, 2018).

Sufficient quality and quantity of resources and facilities determine how effectively the process of teaching and learning takes place. Early et al. (1986) found that instructional materials such as textbooks, and visual and audio materials not only enhance communication between teachers and learners but, also facilitate child-centred learning through discovery. With the availability of textbooks, pupils will be able to read on their own while at home and do their homework. The availability of good quality instructional materials is an important factor in pupils' achievement. Thus, well-produced and easily available reference material is an important asset. Siraj-Blatchford & Sylva (2004), noted that no meaningful teaching-learning can take place without adequate instructional materials.

Summary of Chapter

Chapter Four presents the results and discussion of the study on the influence of the school physical environment on kindergarteners' learning within the Ablekuma West District. The chapter begins with an overview of the purpose of the study and the research questions formulated to guide the analysis. The demographic characteristics of the respondents (kindergarten teachers) are described, including their gender

distribution, age range, area of specialization, professional qualification, rank in the Ghana Education Service (GES), and years of service as teachers.

The first research question aimed to investigate the nature of the school environment experienced by kindergarteners. The results show that most of the kindergarten teachers perceive the physical learning environment as not developmentally appropriate. The teachers placed a higher importance on well-ventilated classrooms, sufficient natural light, and complementing natural light with adequate artificial light. The second research question explored how physical facilities promote kindergarteners' learning. The findings indicate that the kindergarten teachers believe that well-designed classrooms with appropriate physical facilities positively influence the teacher-learner relationship and contribute to improved learning achievement. The third research question focused on how the sufficiency of instructional materials promotes learning. The study revealed that many instructional materials are insufficient in the kindergartens, which may affect the teaching-learning process and student performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Overview

This chapter presents the summary of the study, conclusions that emanated from the study and recommendations made as a result of the key findings from the study.

5.1 Summary

The purpose of the study was to investigate the influence of the school physical environment on kindergarteners' learning within the Ablekuma West District. The study's objectives were; to describe the nature of the school environment experienced by kindergarteners, find out how physical facilities promote the learning of kindergarteners and assess how the sufficiency of instructional materials can promote the learning of kindergarteners in the Ablekuma West district. The research questions were formulated from the objectives stated above.

The study used a descriptive survey design and the sample size was 113 early childhood teachers. Simple random sampling technique was used to select the sample size. The researcher used a structured questionnaire to obtain data from the early childhood teachers. Data were analyzed using both qualitative and quantitative techniques. Descriptive statistics were done using Statistical Product for Service Solution (SPSS). Data were presented in frequency tables The findings were discussed in line with the research questions under study.

5.2 Key Findings

The findings were anchored on the research questions that were formulated from the research objectives of the study. The following are the key findings from the study;

1. The study found that majority of the kindergarten teachers in the Ablekuma West District believe that the nature of the environment experienced by kindergarteners to some considerable extent is not developmentally appropriate. The teachers positively regarded the kindergarten learning environment as an important and integral aspect of early childhood education which helps to develop children physically, cognitively, socially, and emotionally. They believed a good learning environment ensures the high performance of both learners and teachers.
2. It was evident from the study that teachers in Ablekuma West District believe that physical facilities promote learning of kindergarteners**.** The teachers believed that physical facilities in the ideal classroom play a vital role in composing a strategic factor in the operation and functioning of the teaching and learning as they determine the excellent performance of a school. Thus, learners tend to get more details from their instructors in a well-facilitated environment and, therefore, they perform in a good way. On the other hand, if the environment setting in not conducive, learners feel uncomfortable in the classroom then they tend to be giving divided or distracted attention to the lesson.
3. The study identified that most of the instructional materials and equipment are insufficient, with the majority of the schools having insufficient materials. Hence, the shortage of materials impedes teachers from crafting dynamic and captivating lessons, restricting the range of instructional methods and learning opportunities accessible to kindergarteners.

5.3 Conclusions of the Study

Based on the findings of the study, the following conclusions are made;

According to the study, kindergarten teachers in the Ablekuma West District had unfavourable opinions of the kindergarten pupils' learning environment. The learning environment in the classroom was highly regarded by teachers as a crucial and essential component of early childhood education that supports young children's development. A negative learning environment can hinder the professional growth of teachers and impede the learning progress of students. In such settings, teachers may face challenges in delivering engaging lessons, and students might struggle to actively participate and absorb information. The absence of a conducive learning atmosphere can lead to decreased motivation among both teachers and students, potentially resulting in suboptimal educational outcomes. Creating a positive and supportive learning environment is essential for fostering a joint and effective educational experience for all stakeholders...

Additionally, the study concludes that the provision of sufficient learning facilities and instructional materials within a suitable classroom atmosphere are some of the factors that improve the standard of education in schools.

The study also provides much evidence to conclude that most kindergarten centres in the Ablekuma West District have insufficient instructional materials and equipment, with the majority of the schools having insufficient materials.

5.4 Recommendations of the Study

Based on the findings and conclusion, the following recommendations are made:

1. The study found that the majority of kindergarten teachers in the Ablekuma West District believe that the nature of the environment experienced by kindergarteners to some considerable extent is not developmentally appropriate. The study recommends that the community, Government and Non-Governmental Organisations should be encouraged to provide financial and material support for schools to improve the facilities such as the library which in turn enhance teaching-learning process.
2. Since the study found that teachers in Ablekuma West District believe that physical facilities promote the learning of kindergarteners, it is thus recommended that the Ablekuma West District education directorate and headteachers should continually make resources available and with the assistance of kindergarten teachers maintain the teaching-learning resources, learning centres, furniture, the print environment and ventilation of the physical learning environment to always be in a decent condition.
3. It was established by the study that instructional materials and equipment are insufficient, with the majority of the schools having insufficient materials. It is recommended by the study that the government should allocate more resources for the improvement of capital infrastructure in kindergarten centres. The head teachers should also plan and adequately utilize the Capitation funds for the purpose of developing the priority areas in the school so as to enhance learning. Again, the teachers should improvise teaching and learning materials to complement what is available to them.

5.5 Suggestion for Further Studies

The study focused on Ablekuma West District which is an Urban community, a similar research could be carried out in a rural setting to give a balanced view of the school environmental factors influencing teaching-learning.

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APPENDICES

APPENDIX A

Questionnaire for Teachers

QUESTIONNAIRE FOR ECE TEACHERS

Dear Respondents,

I am Gloria Sakyibea Amfo-Asamoah, a Master of Education candidate of the University of Education, Winneba researching on the topic "Effect of School Physical Environment on Kindergarteners' Learning in the Ablekuma West District ". Your candid and objective responses to the items in the questionnaire will go a long way in assisting the researcher to get the needed information. This questionnaire is strictly for an academic exercise, and you are humbly requested to provide accurate and frank information that will assist the researcher in obtaining the correct data for this exercise. Your responses will be treated in strict confidence. You are please requested to tick (√) a number that best describes your view and anywhere applicable. Thank you.

PART I

BIO-DATA OF PARTICIPANTS

1. Sex

a. Male [ ]

b. Female [ ]

2. Age Range

a. Below 20 years [ ]

b. 21 – 30 [ ]

c. 31 – 40 [ ]

d. 41 – 50 [ ]

e. 51 – 60 [ ]

3. Area of Specialisation

a. Early Childhood Education [ ]

b. Basic Education [ ]

c. Special Education [ ]

d. Others (please specify)……...

4. Professional Qualification

a. Certificate [ ]

b. Diploma [ ]

c. Degree [ ]

d. Post Graduate Diploma in Education [ ]

e. Masters [ ]

f. Other (please specify)……

5. Rank in the Ghana Education Service

a. Superintendent I [ ]

b. Superintendent II [ ]

c. Senior Superintendent II [ ]

d. Senior Superintendent I [ ]

e. Principal Superintendent [ ]

f. Assistant Director II [ ]

g. Assistant Director I [ ]

h. Other (please specify) …….

6. Number of years as a teacher

a. 0 – 5 years [ ]

b. 6 – 10 years [ ]

c. 11 – 15 years [ ]

d. 16 – 20 years [ ]

e. 21 years and above [ ]

PART II

DATA ON RESEARCH OBJECTIVES

SECTION A: Nature of School Environment Experienced by Kindergarteners in the Ablekuma West District.

The table below presents data on nature of school environment experienced by kindergarteners in the Ablekuma west district. Read each statement carefully and indicate the extent to which you agree or disagree with the statements by ticking (√) 5=Strongly Disagree (SD), 4=Disagree (D), 3=Neutral (N), 2=Agree (A) and 1=Strongly Agree (SA)

S/N	Statement	SA 1	A 2	N 3	D 4	SD 5
1	Classroom is close noise polluted area					
2	Noise impacts learning results in the classroom					
3	There is sufficient natural light in the classroom					
4	Natural in the classroom is complemented with adequate artificial *light*					
5	Classroom is well decorated with colourful materials					
6	Classroom is well ventilated					
7	Space for learners' free movement inside them classrooms					
8	There are enough learning centres					
9	There is a place for learners' naps/sleeping					
10	There are enough furnitures					
11	Furnitures are developmentally appropriate					

SECTION B: How physical facilities promotes the learning of Kindergarteners in the Ablekuma West district.

The table below presents data on how physical facilities promotes the learning of kindergarteners in the Ablekuma West District. Please read each statement carefully and indicate the extent to which you agree or disagree with the statements by ticking

(√) 5=Strongly Disagree (SD), 4=Disagree (D), 3=Neutral (N), 2=Agree (A) and 1=Strongly Agree (SA).

S/N	Statement	SD 5	D 4	N 3	A 2	SA 1
12	well-designed classroom ensures cordial teacher-learner relationship					
13	Classroom physical facilities play a fundamental role in improving learning achievement in the school system.					
14	Teaching and learning take place effectively where learners and teachers are physically comfortable					
15	well-lit classroom creates a better, more favourable impression for learning					
16	Well-ventilated classroom promotes children's learning					
17	classroom temperature plays a vital role in how comfortable learners feel when executing a task.					
18	Well-arranged desk and chair affected improve learning process in the classroom.					
19	safe and noiseless classroom has a higher learning motivation					

SECTION C: Sufficiency of instructional materials in kindergarten centres in the Ablekuma West District.

The table below presents data on sufficiency of instructional materials in kindergarten centres in the Ablekuma West District. Please read each statement carefully and indicate the extent to which these materials are available ticking (√) VS=Very Sufficient, S=Sufficient, FS=Fairly Sufficient, I=Insufficient, NA=Not Available

S/N	Instructional Material	VS	S	FS	I	NA
20	Text books					
21	Exercise books					
22	Chalk/markers					
23	Chalkboard/Whiteboard					
24	Wall charts					
25	Supplementary Books					
26	Wall charts					
27	Counters					
28	Flashcards					
29	Teacher's guide					
30	Learner's guide					
31	Radio					
32	Television					
33	Computers					
34	Manipulatives					

Thank You for Your Participation. I'm Very Grateful for Your Time

APPENDIX B

Introductory Letter

UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF EARLY CHILDHOOD EDUCATION
P. O. Box 25, Winneba, Ghana
+233 (020) 2041072
ece@uew.edu.gh

FES/DECE/I.1

21st December, 2022

The Director
Ghana Education Service
Ablekuma West Distirict

Dear Sir/Madam

INTRODUCTORY LETTER

We write to introduce to you **Ms. Gloria Sakyibea Amfo-Asamoah** with index number **220015958** who is an M. Ed student in the above department. She was admitted in 2020/2021 academic year and has successfully completed her course work and is to embark on her thesis on the topic: ***"Effect of school physical environment on kindergarteners' learning in the Ablekuma West District".***

Ms. Amfo-Asamoah is to collect data for her dissertation, and we would be most grateful if she could be given the needed assistance.

Thank you.

Yours faithfully,

DR. MICHAEL SUBBEY
AG. HEAD OF DEPARTMENT