



**University of
Zululand**

**Effect of classroom environment on learning of four-year old preschool
children in Sibasa circuit, Vhembe district**

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Makhwanya Ntshengedzeni Theresa

SUPERVISOR: PROF AP KUTAME

CO-SUPERVISOR: PROF T MBATHA-NGUBANE

2020

DECLARATION

I, Makhwanya Ntshengedzeni Theresa, declare that “**Effect of classroom environment on learning of four-year old preschool children in Sibasa Circuit, Vhembe District**” is my own work and that all the resources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any institution.

Signed byon the..... day of the.....2020

Supervisor on theday of the2020

Co-Supervisoron theday of the2020

DEDICATION

I am dedicating this research study to my mother, Nemalili Mutshekwa, my husband Tshililo Edwin Makhwanya, my children Mulalowawe and Tshilidzitshawe, and my daughter-in-law, Roshuma, for understanding and supporting me throughout my academic journey.

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ABSTRACT

Globally, every country is striving to put early learning at the apex of its priorities, hence, governments make many provisions to ensure early learning is accessible. The National Integrated Early Childhood Development Policy of South Africa has been put in place to ensure learners have access to quality education, without discrimination, for example, the 0-4 year olds. For preschool children to develop holistically, they need a well-designed classroom learning environment that supports the learning and development of four-year old preschool children. This study aimed to explore the effect of classroom environment on the learning of four-year old preschool children. The study employed the pragmatic paradigm, where both qualitative and quantitative methods were used, and data was collected through interviews and questionnaires. The results show that a well-designed classroom environment promotes learning and the children's long-term development. Factors, such as - lack of learning materials, funds, lack of qualified teachers - have a negative effect on the learning of preschool children. The results further reveal that for a classroom environment to support the learning and development of the four-year old preschool children, qualified teachers, availability of classrooms, appropriate learning, and teaching materials are of paramount importance. A model for effective classroom environment design was developed based on the research findings.

Key words: Classroom, environment, preschool, Early Childhood, early learning.

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LIST OF ABBREVIATIONS AND ACRONYMS

CPD	Continuing Professional Development
CRC-	Convention on Right of Children
DoE	Department of Education
DoSD	Department of Social Development
ECD	Early Childhood Development
ECE	Early Childhood Education
EU	European Union
FET	Further Education and Training
FPE	Free Primary Education
IEQ	Indoor Environmental Quality
MoE-EMIS-	Ministry of Education-Education Management Information System
NCQTL	National Centre on Quality Teaching and Learning
NGO	Non-Governmental Organization
PBC	Practice Based Coaching
SADEC	Southern African Development Community
SASA-	South African Schools Act of 84 of 1996
SAQA	South African Qualification Authority

UN United Nation

UNESCO United Nations Educational Scientific Cultural Organization

UNICEF United Nations International Children's Emergency Fund

CHAPTER ONE

1. INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The physical learning environment has gained some attention, especially among preschool teachers, because most pre-schoolers spend a lot of time in some classroom-settings. Zane (2015) indicates that for preschool children to learn efficiently and effectively, a rich classroom environment, full of materials, activities, and teachers or adults who can assist pre-schoolers, is essential. In this regard, the quality of a learning environment is critical as it promotes intellectual activities, interaction, generation of ideas, encourages learning and the development of preschool children (Ahmad & Amirul, 2017).

This study is about the effect of the classroom environment on the learning of four-year old preschool children at the Sibasa Circuit in the Vhembe District. Ahmad and Amirul (2017) affirm that a well-designed and carefully planned classroom may enable the four-year child to learn comfortably and safely. A sense of belonging is essential in children's lives. When children feel that their environment resembles home, they may explore new things (Ahmad & Amirul, 2017).

Tsiakara and Digelidis (2015) add that well-designed learning environment guides children towards the acquisition of different skills, provides opportunities for active learning, and develops inquiry skills. Similarly, Blankson and Blair (2016) mentioned that children's high-quality learning can be enhanced by providing them with a rich learning environment as it makes preschool children gain a lot in academic readiness in all subjects (Hatfield, Burchinal, Pianta & Sideris, 2016). Hu, Teo, Nie, and Wu, (2017) show that children in high-quality early childhood classrooms are more competent than their counterparts. Children in a well-designed classroom may find it easier to collaborate, as they experience, relatively, less misbehaviour from the others (Hu, Teo, Nie & Wu, 2017).

This chapter outlines the problem statement on the effect of classroom environment on the learning of four-year old preschool children; the aim of the study; research questions that were guided by the research objectives, research methodology, delimitation of the study and chapter divisions.

1.2 BACKGROUND TO THE STUDY

The Convention on the Right of the Child stipulates that young children have a universal right to survival and the development to full potential without discrimination (Lücker-Babel, 1995). In this regard, the European Union (EU) countries are also concerned about improving the quality of preschool education and to provide equal opportunities for them to access quality preschool programs (Camović & Hodžić, 2017).

In developing countries like Malaysia, quality and conduciveness of preschool classroom environments are determined by indoor environmental quality (IEQ) features, such as thermal, visual, and acoustic comfort, which in turn influence the learning abilities of preschool children (Shaari & Ahmad, 2016). Smith (2019) endorses that preschools that possess good indoor-air quality, proper ventilation, natural light, and the absence of contaminants and toxins, produce better health outcomes for preschool children.

An effective classroom environment is comprised of - the relationships between learners and their teacher; clear teachers' expectations of the children's behaviour; the strategies employed for effective teaching; the kind of materials being used to motivate children, and the actual exhibited social behaviour of the children. Such an environment is further enhanced by the physical setting and design of the classroom that targets the specific needs of the children (Obaki, 2017).

In Kenya, emphasis is put on the effectiveness of the classroom learning environment which is determined by quality educational facilities, such as shelves filled with movable furniture, books, writing utensils, printed materials, and good infrastructure (Boakye-Boaten, 2010). In Ghana, the classroom environment for pre-schoolers is not

conducive for learning, especially, in the rural areas. Teaching and learning are conducted under trees and in dilapidated classrooms. The classrooms lack proper furniture, toys for children, and there are no teaching resources, such as wall charts (Ministry of Education-Education Management, and Information System (MoE-EMIS), 2018).

Section 29 (1) of the Constitution of the Republic of South Africa, (1996) guarantees the rights of all children, under the age of 18 years, including preschool children, to equal enjoyment of the right to basic education (World Health Organization (WHO); United Nations Children's Fund [UNICEF], 2012). Preschool children have the right to life, dignity, and access to information, citizenship, and a healthy environment (National Integrated Early Childhood Development Policy, 2015), therefore, a healthy classroom environment, full of educational facilities promotes life-long learning amongst preschoolers.

On the basis that preschool children have the right to access quality basic education, the government of South Africa has developed the National Integrated Policy of Early Childhood which is aimed at giving the children the best start in life. It aims at building a solid foundation for physical, emotional, psychosocial, cognitive, and healthy development. During early childhood, the child's brain grows very fast, and the capacity to learn new information also peaks (Organization for Economic Co-operation and Development (OECD), 2017). A child's brain is, therefore, built and not born, as the brain is shaped by environmental experience (Britto, 2017).

Pipkin (2015) echoes that in the classroom learning environment, children acquire the meaning of the world around them through varied experiences with the material and people within the environment. According to Bers, Strawhacker and Vizner (2018), if the learning environment is well-designed and motivating, it becomes an asset that can shape the preschool children's experiences and behaviour. Furthermore, Smith (2019) submits that early-learning spaces with well-resourced classrooms, during the preschool period, is essential because it sustains play and exploration as well as encouraging children to use teachers' time, professionally.

Salleh, Kamaruzzaman and Mahyuddin (2013) posit that poor facilities, such as – poorly-ventilated classrooms, as well as, insufficient furniture, resources and spatial quality, make the learning environment ineffective, as teachers' motivation and children's education are negatively affected. Poorly-ventilated classrooms put children at risk because they are exposed to either harsh weather conditions or health issues. If a learning environment is not conducive, both children and the teachers are not safe. This is confirmed by Bullard (2010) who emphasized the fact that the quality of preschool education is determined by the quality of the physical learning environment. This view is supported by the National Policy for an equitable Provision of an Enabling School Physical Teaching and Learning Environment (Republic of South Africa (2008), which highlights that poor environment may contribute to learners' absenteeism, dropping out of school, teachers' absenteeism and failure of both teachers and learners to be engaged in operative teaching and learning. Young children need breathing spaces where they can have freedom of movement because they learn through play.

The environment affects children's moods, ability to form relationships, the effectiveness of play, and health (Ahmad & Amirul, 2017). Jacobson (2015) concurs with the view that the environment for preschoolers should be based on children's needs by providing an opportunity for learning and growth, in all developmental domains; early-learning facilities are directly related to the promotion of children's development, health, and safety, as well as teacher effectiveness. The classroom learning environment plays a significant role in shaping the behaviour and stimulating preschool children to engage in the learning process (Ahmad, Noh, Adna, Puteh & Ibrahim, 2013). Lack of a decent classroom learning environment may lead to failure of children developing holistically (Shaari & Ahmad, 2016).

1.3 PROBLEM STATEMENT

Early learning is a debatable issue worldwide that needs attention. Many initiatives have been made to make early learning accessible by all children. The South African government has introduced the National Integrated Early Childhood Development Policy (2015), aimed at attracting all learners to access quality education, without

discrimination, including 0-4 year old children. In this context, a learning environment is a crucial aspect that needs to be addressed to ensure the effectiveness of teaching and learning, especially for four-year old pre-schoolers. Despite the availability of children's policies, such as - Early Learning and Development Standards for children from birth to four years' curriculum policy (Department of Education (2009); National Integrated Plan for Early Childhood Development (2005); Republic of South Africa Department of Education (2007) and the National Education Policy Act (27/1996), the classroom learning environments for four years' preschool children are not conducive for learning.

Having been a foundation phase teacher for more than three decades in the Sibasa Circuit, I observed that the preschools' physical classroom environments were not conducive to learning. The Sibasa Circuit, which is in the Vhembe District of the Limpopo Province in South Africa, is situated in a rural location. I observed that most preschool children in the Sibasa area lack well-ventilated classrooms with adequate and proper furniture. They experience extremely hot weather conditions, especially during the summer season. These children are at the exploration stage of their development, hence, their learning should be very stimulating, instead they seem to be at school, only to benefit from the feeding schemes; basic resources, such as toys, legos, and dominoes are not available. It has not been empirically established the extent to which pre-schoolers in the Sibasa Circuit's concentration span is affected by such conditions, however, it is still an obvious source of concern. This lack of research and literature describing how these conditions affect the learning of four-year old preschool children motivated this research.

1.4 AIM OF THE STUDY

This study aimed to explore the effect of classroom environment on the learning of four-year old preschool children at the Sibasa Circuit of the Vhembe District Limpopo Province in South Africa.

1.5 OBJECTIVES

The following objectives guided the study:

- 1.5.1 To establish the effect of classroom environment on the learning of four-year old preschool children;
- 1.5.2 To find out the level to which classroom environment affects the learning of four-year old preschool children;
- 1.5.3 To explore the conditions of the classrooms in schools at the Sibasa circuit providing learning for four-year old preschool children;
- 1.5.4 To identify the strategies to promote the learning of four-year old preschool children based on the classroom environment.

1.6 RESEARCH QUESTIONS

The study was guided by the following main research question, followed by the sub-research questions.

What is the effect of classroom learning environment on the learning of four-year old preschool children in the Sibasa Circuit, Vhembe District?

- 1.6.1 How does the classroom learning environment affect the learning of four-year old preschool children?
- 1.6.2 To what extent does the classroom environment affect the learning of four-year old preschool children?
- 1.6.3 What are the conditions in the classroom learning environments for four-year old preschool children, at schools in the Sibasa Circuit?

1.6.4 Which strategies can be employed to promote learning of four-year old preschool children?

1.7 RESEARCH DESIGN AND METHODOLOGY

A research design is a plan or road map that determines how to carry out a research study (Creswell, 2014). McMillan and Schumacher (2010) refer to research design as a plan for selecting the subjects, the research sites, data collection, and analysis procedures to answer the research question. The research design and methodology for this study are discussed in detail in Chapter 3.

1.7.1 Research paradigm

A research paradigm is a set of beliefs or epistemological assumptions the researcher uses to make sense of research information (Briggs, Coleman & Morris, 2012). The pragmatic paradigm was used, employing qualitative and quantitative research methods. The paradigm is discussed in detail in Chapter 3.

1.7.2 Methodology

According to Leedy and Ormrod (2010), a research methodology refers to a general approach the researcher takes in carrying out the research project. In this study, both qualitative and quantitative research methodologies were employed in establishing the effect of the classroom environment on the learning of four-year old preschool children. Both methodologies are discussed in the sub-sections that follow:

1.7.2.1 Qualitative data collection

In this study, the natural setting is the preschool classroom environment where the four-year old learners and their teachers are located. In the qualitative aspect of this study, data were collected through interviews; this was done through face-to-face interviews aiming at understanding the effect of classroom environment on the

learning of four-year old preschool children. The data collection procedure is discussed in detail in Chapter 3.

1.7.2.1.1 Population

McMillan and Schumacher (2010), explain a population as the entire set of individuals who have some common characteristics; sometimes the population is referred to as the 'universe'. In this study, the target population was the preschool teachers at the Sibasa Circuit.

1.7.2.1.2 Sampling procedures

A sample is a smaller number of people who are selected to represent a large population (Johnson & Christensen, 2019). A purposive sampling procedure was used to select the participants for this study. A detailed discussion of the purposive sampling procedure is discussed in Chapter 3.

1.7.2.1.3 Interview schedule

The interview was guided by an interview schedule. An interview schedule is a written list of questions, open- or close-ended, prepared for use by the interviewer in a person-to-person interaction (Kumar, 2019). Open-ended questions were used to elicit opinions from the participants about the effect of the classroom environment on the learning of four-year old preschool children. A detailed discussion of the interview schedule is provided in Chapter 3.

1.7.2.1.4 Data collection procedure

Castle (2009) posits that if data are to be collected in meaningful way, it depends on the research approaches and methods used. In this study, data were collected using an interview schedule, as described in Chapter 3.

1.7.2.1.5 Data analysis

A systematic process of coding is used for categorizing and interpreting data, to provide explanations of a single phenomenon of interest in qualitative research (Bogdan & Biklen, 2007). Data were transcribed verbatim; after this, the similarities and differences were identified to develop codes for interpretation purposes. After coding the categories, subcategories were also formed. The process is described in full in Chapter 3.

1.7.2.2 Quantitative data collection

McMillan and Schumacher (2010), state that a quantitative method is an approach that gives a chance to the researcher to establish a relationship among variables that can be measured. A detailed discussion of quantitative data is provided in Chapter 3.

1.7.2.2.1 Quantitative Data Collection Instrument

Questionnaires were used for the collection of quantitative data and these were filled in anonymously. Before the process began, the purpose of the study was outlined and what will happen with the data collected. The process is described in full in Chapter 3.

1.7.2.2.2 Data collection procedure

The researcher distributed the self-administered questionnaires to the respondents who meet the criteria of having been a preschool teachers for three or more years. Questionnaires had to be completed within a week, then they were collected. Discussions regarding the data collection procedure are provided, in detail in Chapter 3.

1.7.2.2.3 Data analysis

Data were rechecked and edited before the statistical techniques were applied. Data were verified for consistency and accuracy. Where respondents wanted to restructure the questionnaire, corrections were acceptable as alluded to by (Kent, 2015). Collected data were entered into a computer loaded with the Statistical Package for Social Sciences (SPSS) version 25. A detailed discussion of data analysis is provided in Chapter 3.

1.8 DELIMITATION OF THE STUDY

In this study only face-to-face interviews and questionnaires were used as data collection instruments. If more data collection instruments could have been used, we would have obtained even more comprehensive results on the effect of classroom environment on the learning of four- year old preschool children. Due to financial constraints, however, there were a limited number of participants who were engaged in the study. The study would have included more teachers and some parents to obtain rich information on the effect of classroom environment on four-year old preschool children and avoided generalization

1.9 CHAPTER DIVISION

The study is structured in five chapters, which are as follows:

Chapter One: Introduction

This chapter gives an introduction, background to the study, problem statement, aim of the study, objectives, research questions, research design and methodology, as well as delimitation of the study.

Chapter Two: Literature review

The chapter presents a summary of relevant literature produced by different researchers and authors. The theoretical framework which underpins this study is also discussed in this chapter.

Chapter Three: Research design and methodology

The chapter focuses on the research design and methodology, together with the research paradigm, research approach, data collection, data analysis procedures, establishing trustworthiness, and ethical considerations.

Chapter Four: Presentation and discussion of results

Data collected through questionnaires and interviews are presented and discussed in this chapter. The findings of the study were analyzed, interpreted, and discussed.

Chapter Five: Conclusions, findings, and recommendations

This chapter presents a summary of the main findings, recommendations, and conclusions.

CHAPTER TWO

LITERATURE REVIEW

2. EFFECTS OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN

2.1 INTRODUCTION

Chapter 1 presented an introduction to this study. This chapter focuses on the literature reviewed on the effects of classroom environment on learning of four-year old preschool children. The theoretical framework underpinning this study is discussed, followed by the literature reviewed on this topic. The chapter also provides the level to which classroom environment affects the learning of four-year old preschool children. It also covers the literature on strategies that may be used to improve the classroom environment of preschool children. The review was guided by the research objectives.

A classroom environment is an issue that needs attention since preschool children spend long hours in the classroom. It is a place where children love to learn, transmit emotions, and have pleasant memories of their learning experiences (Mendez & del Pilar, 2017). Some decades ago, traditional classrooms were characterized by teachers who were the only source of knowledge. Currently, the classroom environment functions as an ecosystem where both teachers and children interact with different materials, such as puzzles, logos, and cubes (Castro, 2015). Such interaction helps the child to develop holistically.

Moreover, the classroom environment can influence behaviour and social interaction amongst preschoolers. Matthews and Lippman (2016) posit that poorly spatial layout of a classroom can cause classroom disciplinary problems, which lead to stress and negative social interaction amongst preschool children. An appeal is therefore made for teachers to manage the preschool classroom well so that children can study comfortably and gather useful information in this different social context (Puteh, Che Ahmad, Mohamed Noh, Adna & Ibrahim, 2015).

Preschool children should consistently be in a supportive classroom environment where they feel safe, healthy, happy, and are able to learn (Adamu & Hogan, 2015). The classroom environment is thus considered a welcoming and comfortable place for preschool children to develop their curiosity to explore things; it plays a significant role in keeping preschool children, especially, the four-year-olds, actively engaged. It is seen as an opportunity to mould children to become better citizens in the future (Puteh *et al.*, 2015).

2.2 THEORETICAL FRAMEWORK

This study is underpinned by Bio-ecological Systems theory, developed by Bronfenbrenner (2005). The theory looks at a child's development within the context of the system of relationships. In this theory, the focus is not only on the child and their immediate family members but also looks at the interaction of preschool children at school.

Bronfenbrenner's (2005) Ecological System theory is divided into four components that influence the learning environment, as presented in Figure 2.1.

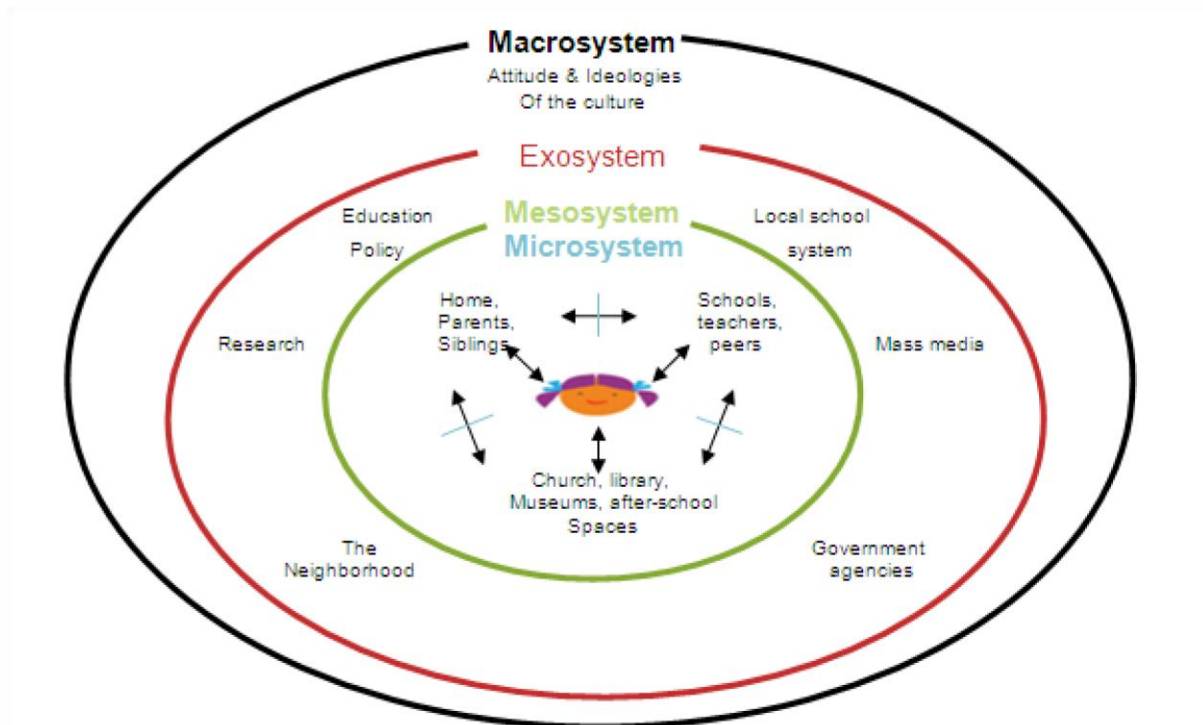


Figure 2.1: Systems that influence the learning environment (adapted from Takeuchi & Levine 2014:13).

2.2.1 Microsystems

Microsystems include the home, classroom, and child-care or after-school programs (McNamara, 2016). How teachers in the classroom environment interact with the child will affect how the child learns. The more encouraging and nurturing these relationships and places are, the better the child is able to grow and develop (Duchesne & McMaugh, 2018). Furthermore, how a child acts or reacts to these people in the Micro-systems affects how the child is treated in return. In this regard, Boeren (2019) draws the idea that adults and children play an important role in the micro-system. The author continues that children learn through manipulating different materials, and the teacher arranges or brings suitable material so that learning could be possible. The classroom environment is one of the micro-systems that has very rich features in different learning centres. For example, a manipulative centre where

children interact with different toys, such as puzzles cubes and logos is important for the development of the four-year old preschool child.

2.2.2 Mesosystem

In the mesosystem, there is an interrelationship between, for example, the children's teacher and their parents and between their church and neighbourhood. To make the learning environment more effective, children need assistance from parents. They should assist children with homework or buy them educational toys. In this regard, children's schooling also affect their home life, directly or indirectly (McClure, Guernsey, Clements, Bales, Nichols, Taylor & Levine, 2017).

2.2.3 Exosystem

The exosystem includes the societal structures and institutions that do not directly contain the children but can directly or indirectly affect them. An example of this system are government policies, such as the National Integrated Early Childhood Development Policy which positively affect the child as it compels children to learn at an early age (McClure *et al.*, 2017).

2.2.4 Macrosystem

It is composed of cultural values, customs, and laws. Families and kinship members have a primary influence on their children's learning and development. They provide children with relationships, opportunities, and experiences that shape each child's sense of belonging, being and becoming (Tadjic, Martinec & Farago, 2015).

Bronfenbrenner ecological theory influences microsystems, mesosystem, exosystem and macro-system; these affect the classroom learning environment of preschool children. The microsystems is where the child is interacting with the immediate environment, which includes the school, whilst in mesosystem there is evidence in the collaboration with family and communities to enhance learning and development. At

the exosystem level, there is a need for classrooms to comply with national policies, such as the National Integrated Early Childhood Development Policy.

McClure, Guemsey, Clement, Bales, Nichols, Kendall-Taylor and Levine (2017) posit that preschool children exist in the education system which has different interrelated systems; these interactions complement each other. McClure and colleagues (2017) indicate that teachers in the classroom environment cannot execute their duty without adequate training, resources, support from the school, parents, availability of funds, and policymakers. When parents get involved, preschoolers acquired new knowledge, skills, and their confidence is increased. Government policies play a significant role in shaping the education of every learner as it guarantees access to education without discrimination. Aiming at producing a holistic and potential being full of respect and humility, preschoolers can, therefore, not learn effectively if there is no interrelation between these components. Preschool children cannot learn in isolation; they need essential factors that can boost their early education.

Bronfenbrenner's ecological theory is consistent with Maria Montessori's (1912) theory of constructivism which stresses that the classroom environment needs to liberate the spirit, promote independence, allow activities, and be attractive, safe, and orderly arranged. Montessori (1912) adds that an early-childhood classroom needs to have child-sized furniture with open shelves and high-quality materials. In this regard, the child-size environment is not only applied to furniture but also includes things that are within the entire building such as low door handles and windows that are near the ground (Bullard, 2010). Bullard (2010) adds that the teacher has the responsibility to give support and guidance where necessary on how to use these materials.

Montessori (1966) further emphasizes that a classroom environment should be the centre for instruction, with different learning facilities that have different learning materials for practical life curriculum. For example, in a drama centre, children should go to school in old clothes to do role plays. Toys, such as dolls, dolls clothes, bottles for milk, for fantasy plays in the classroom should be available. During imaginary play, children may pretend to be mothers holding the babies and giving them milk.

Montessori (1966), suggests that in the classroom, children can learn to prepare snacks and to lay the table. Such practical fictional life promotes self-realization in preschool children and builds up gross and motor skills, together, with eye-hand coordination. In addition, the classroom needs sensory materials, such as coloured cubes that enable preschool children to classify or put things in a sequence, from the smallest to the biggest (Marshall, 2017). Montessori (1962) regards the classroom as the key centre for learning. The teacher must plan, organize, and use resources effectively so that preschool children could be actively involved in the learning activities of such an environment.

The Ecological Theory of Bronfenbrenner is also supported by Vygotsky's (1986) Social development theory that focuses on social interactions in the learning process. Vygotsky's theory suggests that cognitive development depends on the quality of interactions of both individuals and the environment. In this regard, for cognitive development to be effective, the zone of proximal development (ZPD) is applied in the preschool classroom. In the zone of proximal development, preschool children are assisted by knowledgeable people, such as teachers, in both easy tasks that they can do independently and some difficult tasks to avoid frustrations. The aim is therefore, to allow the children to expand their concrete knowledge and ideas (Semmar & Thani, 2015). Vygotsky (1986) also mentions scaffolding as an element whereby teachers and the children interact in the classroom environment to acquire new knowledge. In this process, teachers must ask the children pre-knowledge questions so that they may be able to move from known to unknown.

Vygotsky's theory ratifies that learning involves discovery and interaction between children, the people and objects they encounter each day (Pipkin, 2015). According to Vygotsky, while children engage in the physical classroom learning environment, they learn productive activities, such as storytelling, block building, art and drama (Bodrova & Leong, 2007).

2.3 DEFINITION OF KEY CONCEPTS

The following concepts are elaborated in the context of this study - the effect of classroom environment on the learning of four-year old preschool children, at the Sibasa Circuit of the Vhembe District.

2.3.1 Classroom environment

Sang (2013) defines the classroom environment as a safe and uninterrupted space where qualified teachers offer teaching and learning activities. McMullen (2015) regards the classroom environment as spaces occupied by different things that improve and rally the successes of the learners. A classroom environment is a place that needs to be well designed to attract children to choose different activities that are appealing to their minds. Moreover, Fraser (2012) posits that a classroom is a place wherein the operational activities of the day take place in addition to ensuring the quality of learning, which is broadened by the interactions between teachers and learners. The classroom should be a place where children have the freedom to exercise their potential of creativeness without fear or oppression (Tlou & Feza, 2018). Sang (2013) shows that both internal and external physical conditions of the classroom environment affect and influence the growth of the four-year old preschool children while they are learning.

2.3.2 Preschool

A preschool is a program that prepares four- and five-year-old children for primary school education. Friedrich Froebel, the father of kindergarten, regards it as early learning that bridges the gap between home and school that should be attended by 4 to 6-year-olds (Park & Yang, 2016). Bassok, Gibbs and Latham (2019) view preschool as a place where four-year children accumulate knowledge based on early childhood education experiences. The preschool, also, is a period that forces children to be in a classroom environment where children can learn through various activities (Clark, 2016). Chepkwony, Kafwa and Kisilu (2018) regard preschool as a transition period of

children from home to school. A preschool is cited as the first step provided by the education system, aiming at offering life-long learning processes to the four-year children (Hägglund & Samuelsson, 2009). In this regard, the preschool period is an important stage for emotional and social development.

2.4 THE EFFECT OF CLASSROOM ENVIRONMENT ON THE LEARNING OF FOUR- YEAR OLD PRESCHOOL CHILDREN

This section discusses the report of the literature review on the effect of classroom environment on the learning of four-year old preschool children. The discussion will start globally, then continentally, followed by the Southern African Development Community (SADC) countries and finally South Africa.

2.4.1 The effect of classroom environment on the learning of four-year old preschool children, globally

The classroom environment has an impact on children's learning. Both intangible, as well as symbolic elements of the classroom environment, can influence preschool children positively or negatively depending on how they are utilized (Cheryan, Ziegler, Plaut & Meltzoff, 2014). In America, the literature review shows that the school environment that may affect the development of four-year children are: class size, teacher qualification, and physical classroom environment (Cheryan, Ziegler, Plaut & Meltzoff, 2014). In California, Washington and Colorado research results affirm that children who have a large amount of daylight in their classrooms perform better in mathematics and reading as compared to their counterparts who are exposed to less daylight in their classroom (Cheryan *et al.*, 2014).

Furthermore, in the United States of America, the Convention on Right of Child 1989 (CRC) (Article 13), Lundy, Orr and Shier (2017), backed by the United Nations Committee on Rights of the Child (2009), stress that children of all ages, including the four-years old preschool children have the rights to be heard and to express their views without being intimidated. Preschool children can express their views in the classroom

environment, where they can voice their opinions through play, drawing, painting, making collages, and interacting with teachers and peers (Lansdown, Jimerson & Shahroozi, 2014).

Americans regard guided-play as essential in preschool classrooms. In the classroom environment, the teacher incorporates project-based learning, where children gain knowledge and skills by working with complex challenges while guided by teachers (Zimmermann, Foster, Golinkoff & Hirsh-Paddek, 2019). Zimmermann *et al.*, (2019) show that spatial learning can be acquired by preschool children in the classroom environment through block and puzzle plays. These authors assert that four-year old preschool children, who frequently hear more spatial words, such as - *on*, *under*, *beside* and *far* - tend to produce more spatial language and they solve problems better. For example, when a four-year old preschool children engages in building a house with blocks, they are developing spatial language (Zimmermann *et al.*, 2019).

Furthermore, Satterlee, Molavi and Williams (2015) show that indoor air quality, temperature, ventilation, daylight, and acoustics are essential features of a preschool classroom environment. Deficiency in these features, therefore, may be detrimental to the health status, learning, and behaviour of preschool children. Also, some researchers are convinced that the environment affects brain development and improves school readiness scores (Satterlee *et al.*, 2015). In addition, some studies show that noise affects children's cognitive performance and it can affect reading comprehension; for example, it is for this reason that preschool teachers have to stop and wait when an aeroplane is flying over them.

In Sweden, play is regarded as one of the cornerstones for learning in the preschool classroom environment. Playful activities enable children to develop curiosity and enjoyment for learning (National Agency for Education, 2011). In Malaysia Reddy (2018), puts forward that the classroom environment can strengthen and develop literacy learning, through excellent interaction between teachers and the learners; such an interaction becomes effective by making use of different activities and teaching methods. In Malaysia, literacy development is enhanced by the Malaysian educational policies that allow learners to learn two official languages. Nelson,

Dudovitz and Tumaini (2016) posit that if the world wants to develop future language users, they should engage children in shared reading as it nurtures the love and zeal of reading.

In America, children from poor backgrounds are less likely to enrol in preschools or are more likely to attend lower quality preschools (Morgan, 2019); parents inadequate funds is the main cause for the children not attending high-quality preschools, therefore, only about 40% of children from low-income families may have access to preschool education. Morgan (2019) shows that participating in preschool programs can enhance cognitive development and children can benefit from positive test scores and the likelihood of being high school graduates. The introduction of educational programmes for preschool-aged children emerge aimed at producing general high-quality education programs. Ultimately, President Obama sanctioned a high-quality preschool program and promised to offer universal preschool for all four-year-old children at a cost of millions of dollars. He indicated that investment in these children would save the United States in the future, hence, early childhood development was highly considered during his regime (Dalton, 2017).

During the Summit on Early Education, in December 2014, President Obama indicated that research findings affirm that children who get high-quality early education earn more over their lifetimes than those who did not; they are more likely to finish school and are less likely to go to prison; they are also more likely to hold top job positions. These comments classified early education as a profound investment that can be made in a child's future (Dalton, 2017). Furthermore, Dalton (2017) notes that the first state in America to practice universal preschool program for all four-years-old children was Georgia. A universal preschool program emphasizes that a well-trained teacher can improve the academic achievement of preschool children (Dalton, 2017). Florida's universal preschool program suffered from lack of funds which created a problem of lack of classrooms; this resulted in classes being overcrowded, enrolment limitations and unsatisfactory performance of the children, therefore, indicating that teaching and learning cannot be effective if the learning environment is not conducive (Dalton, 2017).

Preschool children enrolled in large numbers in the preschool programs, however, in counties such as Tennessee, criticisms towards preschool programs emerged. Preschool children were not taught to their fullest capacity, hence, they lacked some developmental skills. In addition, they showed poor academic performance and developed a negative attitude towards school when they proceeded to the third grade (Morgan, 2019). In countries, such as Bosnia and Bangladesh, preschools are characterized by a lack of infrastructure, inadequate funds and resources, as such classroom environments are not conducive for teaching and learning (Jena & Wangmore, 2016). The situation in the countries mentioned above is different to countries such as Scotland, Vietnam, Thailand, and the Philippines as their preschools are furnished with enough resources for teaching and learning. Both teachers and caregivers are given enough space for storage and they get involved in energetic activities in the classroom environment (Zane, 2015). Dalton (2017) adds that in France, good teachers are expected to undergo stimulating courses to maintain the reputation of their preschool classrooms, to ensure quality education, especially in the early years.

2.4.2 The effect of classroom environment on the learning of four-year old preschool children, continentally

Kenyan Safety Standard Manual for Schools shows that effective teaching and learning cannot take place in an environment that is not safe and secure for children (Republic of Kenya, 2008). In Kenya, there is an outcry over the limited physical facilities in some of the preschool, such as lack of classroom doors, lack of space, poor furniture that makes teaching and learning ineffective (Mwoma, Begi & Murungi, 2018). Such unfavourable classroom environment does not make learning effective as some of the children will no longer be interested in listening or doing hands-on activities when they are expected to do so (Ezike, 2018).

Ndani (2015) indicates that class lighting, indoor air quality, and class size promote children's health and educational outcomes; good lighting also increases the preschoolers' concentration span. Ndani (2015) adds that the classroom should be well-lighted and ventilated and have space to store equipment and the walls should be

suitable for displaying pictures and charts. The quality of the teacher also influences the preschool environment. Gumo (2013) asserts that teachers in Kenya are untrained and they cannot teach preschoolers. This is worsened by the low and irregular remuneration which affects the morale of teachers, thus, negatively affecting the learning of four-year old preschool children.

The classroom environment influences the academic performance of preschool children. In the classroom environment, the teacher uses different teaching resources to capture the interest of learners (Castro, Almqvist & Granlund, 2015). In Ghana, the findings show that the learning of four-year old preschool children is hindered by inappropriate furniture, under-resourced learning centres, and overcrowding in the classrooms (Frimpong, 2019).

In Zambia, preschool is not compulsory, therefore, only children from rich families who can pay the fees can access high-quality preschools. Zambian preschools adopt the Western-style and use English as a medium of instruction in the classroom environment. The curriculum involves singing rhymes, hearing stories and learning the alphabet which stimulates basic literacy skills. Tambulukani (2015) states that there is a big challenge when preschool children start their first grade, as teaching and learning at this stage is in the Zambian languages, not in English which they had learned from preschool. These children have had to learn alphabet sounds in English and now have to learn afresh, new sounds in their mother tongue. These make learning for these children ineffective because the foundation from early childhood is compromised by their exposure to the Western styles.

According to the Ghana Ministry of Education (2014), Ghana is one of the best countries on the continent in that it attained a preschool net enrolment of 75%. Ghanaian government strives to improve the quality of preschool, but teachers are faced with many challenges, such as overcrowding, increased workload, low and unreliable teacher remuneration, lack of professional recognition, lack of accountability, minimal professional development opportunities, and lack of voice in the work place. These mentioned factors have a negative impact on the learning of four-year old preschool children (Wolf, Torrente, McCoy, Rasheed & Aber, 2015).

In Kenya, Chepkwony, Kafwa and Kisilu (2018) contend that a well-arranged and attractive classroom environment affects the learning of preschool children as it stimulates preschool children to explore and investigate different aspects, in different learning corners in the classroom. To stimulate the curiosity of children to learn, teachers should utilize instructional materials that suit the appropriate age of children to make learning more effective; the availability and suitability of materials should be relevant for a specific theme, ensuring a well-coordinated lesson, however, only 20% of preschool classrooms have appropriate furniture (Chepkwony *et al.*, 2018). Appropriate furniture affects the learning of preschool children as, for example, it promotes good posture and good handwriting. Policies on early childhood development in Indonesia does not consider teachers who are not well qualified, as, according to Brinkman, Hasan, Jung, Kinnel, Nakajima and Pradha (2016), teachers need to be fully qualified to make a preschool classroom effective.

2.4.3 The effect of classroom environment on the learning of four-year old preschool children in SADC countries

The Southern African Development Communities are striving towards creating a conducive classroom environment aiming at developing the four-year old preschool children, holistically. Conducive classroom makes learning more effective, unfortunately, in places like Zimbabwe, some preschools continue to use outdated curriculum that is inadequate for four-year-old children's development (Chiparange & Saruchera, 2016; Mangwaya, Blignaut & Pillay, 2016). This would imply that the effective learning of four-year children is dependent on proper curriculum because it serves as a mediator between the child and the teacher; without it, learning and teaching cannot bear fruits (Mangwaya *et al.*, 2016).

In Zimbabwe, there is an overwhelming expansion of preschools without considering the availability of classrooms as shortage of classrooms make learning ineffective. Some preschool children are taught under trees where there are no resources and by untrained teachers, hence, educational services are being provided by teachers who do not have the necessary professional experience, training, or professional

supervision; this magnitude of scarcity affects the learning and development of preschoolers (Chiparange & Saruchera, 2016).

2.4.4 The effect of classroom environment on the learning of four-year old preschool children in South Africa

Early Childhood Education (ECE) plays a significant role for the society's future. In South Africa ECE, is managed by the Department of Education in collaboration with the Department of Health and the Department of Social Development and is controlled through the legislation, national policies and strategies. The three Departments, therefore, are also responsible for monitoring the effectiveness of the curriculum of four-year old pre-schoolers in health and social interaction (Varpanen, Strehmel, Kawakita, Marchant, Modise, & Halpern, 2019).

The National Development Agency (2016) has emphasized ECE practitioners as the key figures in constructing a creative classroom learning environment. With the same sentiments, Fourie (2013) posits that the majority of those practitioners lack skills and knowledge in leading ECE centres and thus need assistance from the teachers, therefore, the shortage of well-trained teachers for ECE is posing a challenge in South Africa.

Some of the preschool teachers do not have communicative writing experience, thus, limiting pre-schoolers' writing competence, in early literacy classrooms; this is a huge concern in public schools (Korth, Wimmer, Wilcox, Morrison, Haward, Peterson, Simmerman & Pierce, 2017). Research shows that early literacy, as well as exposure to phonics and pictures are determinants of later school success (Janks, 2014). Hugo, Nel and Nel (2013) show that lack of perceptual skills manifests itself when the child enters formal education and starts to have difficulty in spelling, reading, writing and understanding mathematics (Department of Basic Education, 2011). For example, most of the preschools that are attached to public schools, learners are taught in their mother tongue, therefore, preschool children are not exposed to English; they start English in Grade 1. Lack of stimulation during the preschool period results in a 'diluted' Grade 1 curriculum, especially, in the rural public schools (Tangunyi, 2018). This results in a situation where preschool children in rural areas have competency much

lower than their counterparts in urban areas. The South African education system required the attendance of Grade R as compulsory by the year 2019, however, the Annual National Assessment (ANA) indicates that preschool teachers still teach oral drilling sequence forgetting to progress further onto decoding skills. Oral drilling leaves preschool children with a limited understanding of the meaning of a text (Hoadley, 2013).

The South African education system is still suffering from the 'wounds' of the past apartheid regime (Chürr, 2015). This is shown by the persistence of inequality in the classroom environment, especially, in rural areas. The inequality is displayed in areas such as lack of quality education, unsecured classroom environment, insufficient funds for the provision of preschool education, inadequate buildings, and a shortage of qualified and skilled educators. These challenges make teaching and learning of preschool children futile. Access to education for children in rural areas is poorer because of several imbalances, including aggravated infrastructure backlogs, insufficient numbers of teachers, poorer access to learning and teaching support materials, ongoing language barriers and a higher level of household poverty (Chürr, 2015).

Brooker and Woodhead (2013) indicate that the status of the physical environment in South Africa schools is not conducive for learning because both registered and unregistered Early Childhood Development centres have poor quality learning environment, accompanied by unsafe infrastructure; children cannot learn effectively in an insecure environment. There is a lack of spatial environment which allows free movement for preschool children for most preschool children are taught in dilapidated infrastructure where teachers cannot arrange classroom effectively because there is no space. In such conditions, young children do not develop holistically (Kotzé, 2015). Furthermore, the government-allocated funds seem not enough to cover all the costs of a physical preschool learning environment (Mbarathi, Mthembu & Diga, 2016). Preschools are being conducted by untrained teachers who are poorly paid; this coupled with lack of decent classrooms and facilities, inadequate funds and untrained teachers have a negative influence on the quality of the preschool learning environment (South Africa (SA) Department of Education, 2010a).

African countries are focusing on expanding early childhood development to vulnerable children, unfortunately, some countries, such as Kenya, South Africa, Zimbabwe, and Lesotho put more emphasis on primary and secondary education and neglect the holistic development of pre-primary education (Ng'asike, 2014). The classroom environments consist of empty halls without furniture or mats for the children to sit on; it is just not conducive for teaching (Ng'asike, 2014).

In Mozambique, poverty is very high in rural areas. Preschool classrooms are characterized by the wooden structures, straw walls, and thatched roof. In rainy seasons there is no schooling because rain water enters the classroom through the straw walls; a clear indication that the quality of the classroom environment is not conducive for learning (Martinez, Naudeau & Pereira, 2017).

2.5 THE CONDITION OF CLASSROOM ENVIRONMENT IN SCHOOLS THAT OFFER LEARNING TO FOUR-YEAR OLD PRESCHOOL CHILDREN IN OTHER COUNTRIES

The condition of the classroom environments in schools that offer learning to four-year old preschool children is influential in enhancing children's learning and development. There is a need for high-quality preschool, globally, continentally, in South African Development Community (SADC) countries and in rural areas. The section that follows discusses these points in detail.

2.5.1 The condition of the classroom environment in schools that offer learning to four- year preschool children, globally

In countries like America, the teachers are the ones who arrange classroom conditions in their classrooms. They are responsible for developing instructional conditions that can respond to children's needs, enhance desired behaviour, and establish rules and instructions. Teachers can divide the classes into small or big groups, although, preschool children are more lively engaged in small groups than in a large one. Small groups encourage the active involvement of children (Downer & Kaufman, 2007). In

countries such as Hong Kong, preschool classrooms, however, are not conducive because of a lack of adequate sitting. The traditional sitting style is still emphasized causing some children to children suffer from musculoskeletal problems (French, 2019).

2.5.2 The condition of classroom environment in schools that offer learning to four-year old preschool children, continentally

Mtahabwa and Rao (2010) state that in Tanzania, teachers spend most of their time trying to settle preschool learners down and addressing misconduct. They add that there is no individual learner support, hence, all the learners are on the same developmental level which results in poor academic achievement; there is also, no variety in the teaching strategies. Obaki (2017) shows that parents in Kenya are involved in the learning of their preschool children as they also play a role in regulating their children's social behaviour by providing rules and guidelines about activities that reinforce good behaviour in the classroom. In the classroom situation, neglected children are seen by their involvement in disruptive behaviours. To make the classroom environment more conducive, a collaboration between teachers and parents is essential. Marais (2016) emphasizes that the condition of the classroom environment in South Africa is not conducive to learning because most preschool classrooms are overcrowded.

2.5.3 The condition of classroom environment in schools that offer learning to four-year old preschool children, in South Africa

Poorly-designed facilities characterize many classrooms in rural areas of developing countries, such as Ghana and South Africa. Their classrooms are either hot or too cold or unhealthy (United Nations Educational, Scientific and Cultural Organization, 2015). In Tanzania the classroom environment is not conducive for learning; children sit on a bare floors (Litinchi, 2018). The situation makes parents concerned with overcrowding and the quality of preschool service rendered by teachers (Libent, 2015). Libent (2015) adds that the Tanzanian government lacks proper execution and

monitoring when it comes to the preschool classroom environment. Mghasse and William (2016) state that most teachers are under-qualified to teach preschool children as they are trained to teach primary school children. In addition, public schools that offer to teach preschool children face several challenges, such as, preschoolers walking a long distance to school, therefore, the parents are afraid to register their children in public preschools (Mghasse & William, 2016).

2.6 STRATEGIES TO PROMOTE LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN BASED ON CLASSROOM ENVIRONMENT IN OTHER COUNTRIES

Many strategies can be used to promote the learning of four-year old preschool children. The strategies are grouped as follows: globally, continentally as well as in rural areas.

2.6.1 Strategies to promote learning of four-year old preschool children based on the classroom environment, globally

In the United States of America, various strategies are put in place to improve learning in the preschool classroom environment. One of the strategies that has been adopted is the introduction of the National Institute for Early Education Research program (Morgan, 2019). The program is aimed at providing a universal minimum standard for learning and to evaluate the preschool program using ten minimum standards. Morgan (2019) adds that preschool education can be improved by refining the working conditions of a preschool teacher and quality resources are needed for effective learning to take place. For example, teachers with an empty stomach cannot work with children, therefore, preschool teachers should be well remunerated; adequate funds should be provided for the smooth running of preschools (Morgan, 2019).

Furthermore, in America, to promote effective teaching and learning in the classroom environment, the teacher should undergo intensive training and professional development (Ramírez, López & Ferron, 2019). This is based on the finding that

children whose teachers have undergone training and professional development on how to teach dual literacy - language and mathematics - tend to achieve more outcomes than those whose teachers are not trained (Ramírez, López & Ferron, 2019). Haslip and Gullo (2018) concur with the above idea when documenting that professional development enables the teacher to lay a strong foundation politically, socially and in the classroom environment. Furthermore, McMullen (2015) posits that if teachers can be trained effectively, they would be able to design their classroom perfectly and enable children to focus on the task provided. In the Netherland, teaching and learning are promoted through collaborative play (O'Conner, De Feyter, Carr, Luo & Romm, 2017; Schaik, Leseman, & De Haan, 2018).

2.6.2 Strategies to promote learning of four-year old preschool children based on the classroom environment, continentally

Chepkwony *et al.*, (2018) indicate that in Kenya, the performance of preschool children can be improved through conducting in-service training on new methods and techniques of teaching mathematics. The Kenyan government has put preschool at the apex of its priorities by ensuring that every preschool classroom should be well arranged with appropriate furniture, learning resources, wall charts and a good teacher-learner ratio (Chepkwony *et al.*, 2018). In countries such as Indonesia, the professional development activities of teachers are highly considered so as to make early childhood development effective. Brinkman *et al.*, (2016) indicate that training of teachers is needed; this should be accompanied by coaching to attain better outcomes in the preschool classrooms.

2.6.3 Strategies to promote learning of four-year old preschool children based on the classroom environment, in South Africa

There are many policies and legislation put in place by the South African government to improve teaching and learning of 0-4 years' old children. Such policies include the National Learning and Development Standards for children from birth to four years' curriculum policy (2009), and the National Integrated Plan for Early Childhood

Development which provides access for 0-4 years' children to quality preschool education (Meier, Lemmer & Niron, 2017). This reformation of policies and legislation makes South Africa recognized. The above documents consider Mathematics as a pillar and core subject in schools, including preschool, therefore, early mathematical learning matters for preschool children (Ngusa, Begi & Ndani, 2018). In South Africa, preschool children's early numerical knowledge and skills, such as counting, number identification, number line, shapes can be improved through playing a linear number board game. In addition, children from poor backgrounds can acquire and improve mathematical knowledge by having more time to dwell on similar games (Siegler & Ramani, 2009).

In every preschool classroom environment, quality teaching and learning is important. For the preschool classroom to be effective, quality teachers play a crucial role by providing a learning environment in which the children can develop holistically, therefore, Early Childhood Development centres need teachers who are qualified to teach young children. In South Africa, teachers' qualifications are considered as one of the criteria that affects teaching and learning in the classroom learning environment. To produce quality teachers for preschool children, the country provides various training opportunities (Nkonki & Makura, 2017). South Africa has adopted the National Qualification Framework through the South African Qualification Authority (SAQA) to ensure that training of teachers is done by Further Education and Training (FET) (Atmore, van Niekerk, & Ashley-Cooper, 2012). The Department of Social Development (DoSD) and UNICEF have set out the minimum standards for Early Childhood Development at the NQF Basic Certificate (ECD Level 1).

To promote the classroom environment of the four-year old preschool children, the government has increased the funds; the Department of Social Development spends R350 million and provides support to 5,531 registered Early Childhood Development sites (Atmore, 2012). Much has been done to improve the classroom environment, although, Atmore (2012) shows that in South Africa, many challenges are still facing ECD facilities. The challenges include lack of resources, lack of qualified teachers and inadequate security for the four-year old preschool children and the solution to some of these challenges will be the improvement of the ECD facilities by the Department

of Social Development. Labuschagne (2015) posits that a well-arranged classroom can encourage children to explore and can also provide opportunities for children to make choices and develop language skills, therefore, the classroom environment should be furnished with the necessary equipment.

Strickland, Ginsberg and Hyson (2014) show that ongoing assessment of preschoolers plays a significant role in making preschool classrooms effective. The assessment of four-year old preschool children can be functional through using the following - identifying, collecting, describing, interpreting, and applying classroom-based evidence of early learning to make teaching instructions in the classroom possible. The main aim of this assessment is to assist teachers to select the appropriate activities for individuals or groups (Strickland *et al.*, 2014).

2.6.4 Strategies to promote learning of four-year old preschool children based on the classroom environment, in rural areas

To promote literacy activities in the preschool classroom environment, researchers indicate that the establishment of a school library is essential (Osuchukwu, Edwor & Onyenucheya, 2018). School libraries in rural areas of Nigeria assist teachers to promote reading aloud in the classroom. Teachers can provide preschool children with picture books, as well as fictional and non-fictional books. A library encourages lifelong learning (Osuchukwu, Edwor & Onyenucheya, 2018). Reading aloud can be improved by using age-appropriate high-quality books and text; for example, picture information books, traditional literature including folktales, fantasy, poetry and rhyming books, big books, books that are predictable and repetitive, culturally diverse books and an assortment of alphabet books and number books (Osuchukwu *et al.*, 2018).

2.6.4.1 Recruiting and retaining appropriately-qualified and skilled teachers

A high quality teacher is determined by several features such as teaching experience, qualifications as well as extensive specialist knowledge. Wechsler, Melnick, Maier and Bishop (2016) concur that for effective preschool teaching, a bachelor's degree is a prerequisite.

In early childhood development, there is a need for expert teachers who possess special knowledge about the developmental stages of preschool children and different ways of teaching those children. The teacher should possess problem-solving strategies, accompanied by the ability to live with diverse children, should be able to well-arrange the preschool classroom environment, and give every child total care and respect (Wechsler, Melnick, Maier & Bishop, 2016). In this regard, Brinkman, Hasan, Jung, Kinnel, Nakajima and Pradha (2016) highlight that a highly-educated teacher, in early childhood development is associated with high-quality care in the preschool classroom learning environment.

Attracting high-quality teachers is essential for the attainment of satisfactory achievement in the preschool classroom (Wechsler *et al.*, 2016). Expert teachers have been recruited to teach in early childhood development in large numbers, however, the Department of Basic Education in collaboration with the Department of Social Development employ them temporarily. Upon seeing that there is no job security, these teachers start to disengage themselves, hence, the quality of teaching and learning suffers in most preschools (Okeke & Mtyuda, 2017).

Currently, there is inequality between preschool teachers and primary teachers. Qualified primary teachers are well remunerated and they receive housing allowance monthly, while preschool teachers have no housing allowance; they also cannot afford medical schemes, an indication that they are poorly remunerated (Wangila, 2017). The pace of merging the Department of Basic Education and Department of Social Development is very slow, hence, teaching and learning of preschool children is deteriorating. Currently, the Department of Social Development is concerned with the welfare of children by providing children with grants while neglecting the effective learning of preschool children. The Department of Basic Education should take a decisive step by absorbing preschool teachers in its department.

A caring relationship shapes the development of the children. To improve the classroom environment, children have the right to be supported or cared for physically, emotionally, socially, and intellectually by teachers (Berry & Malek, 2017). Preschool children need to be nurtured by a teacher who will provide motherly care, be full of

love, and patience (Phatudi, 2017). Echoing the same sentiment, the Department of Higher Education and Training (2017) notes that for the caring of four-year children to be effective, preschool teachers should possess - patience, love, care and intense concern for the welfare, safety, and development of children. In the future, these children will then be able to take care of themselves without being supervised (Phatudi, 2017).

2.6.4.2 Continuing Professional development of teachers

Professional development of teachers can influence the learning of four-year old preschool children, therefore, teachers should be provided with enough workshops or in-services. Such workshops assist in providing additional knowledge and skills that can be utilized in the classroom (O' Keefe, 2017). To keep pace with the changing world, a Practice-Based Coaching (PBC) framework was developed by the Office of Head Start National Centre on Quality Teaching and Learning Coaching (NCQTL). The focus of PBC is to develop teachers professionally and not to be judgmental (O'Keefe, 2017).

Coaching is regarded as one of the cornerstones for early childhood teacher professional development, as Wood, Goodnight, Bethune, Prestone and Cleaver (2016) contend that teachers need ongoing coaching and mentoring because they are living in a dynamic world. Effective coaching is also essential for administrators to improve their management of the four-year old pre-schoolers' classroom environment (Kraft & Papay, 2014).

CUREE (2012) concurs that professional development do influence the learning outcomes of preschool children. Continuing Professional Development (CPD) can be enhanced through collaborative inquiry, coaching and mentoring, networks between schools making use of structured dialogues and group work for teachers trying out new approaches (CUREE, 2012).

According to Pring (2011), curriculum development and professional development are interwoven as one cannot exist without the other, thus, teachers' professional development is considered an important school factor impacting on learners'

achievement (William, 2013); taking CPD into consideration makes a difference to pupils' learning. Achievement can, thus, be raised if the quality of teachers improved through mentoring programmes and getting teachers to collaborate and share skills; collaboration plays an important role as it creates a support and engagement structure (Lofthouse & Wright, 2012).

Teachers may also use social media to facilitate Professional Development (PD) that is more participatory and supportive of teachers' roles as professionals and intellectuals. Social media, thus, needs serious consideration as a CPD platform in developing the classroom environment. Bett and Makewa (2020) state that teachers' professional interaction through Facebook would allow children to advance in technology. Through Facebook, individuals from the same profession, or of the same passion and interests can meet virtually and share ideas, as well as receive updates on relevant seminars, conferences, courses that will enhance the objectives of the group (Bett & Makewa, 2020).

2.6.4.3 Allocation of space and materials

Play is one of the activities that are highly considered for the development of preschool children. Wilson (2015) identifies playing as the child's selected activity in the classroom environment, where children employ and engage with materials of their own choice, therefore, play does not happen in a vacuum. Playful learning occurs in a well-organized classroom space; poorly-organized classroom space increases aggression and low levels of play (Wilson, 2015). Wright (2016) concurs that in limiting the amount of time for play and discovery, teachers disrupt developmentally-appropriate practices for young children in the classroom learning environment. In developed countries like America, four- year old preschool children spend 20% of their day in pretend play and they use materials, such as plastic foods, dolls and dress-up clothes (Taggart, Fukuda & Lillard, 2018). Zosh, Hopkins, Jensen, Liu, Neale, Pasek, Soli and Whitebread (2017) maintain that learning through play can happen during a free period and should be played towards a learning goal. Zosh, Hopkins, Jensen, Liu, Neale, Pasek, Soli and Whitebread (2017) indicate that playful learning can take many forms, including physical games, such as hide and seek, construction play with blocks, but these need

space and an enabling environment. Sufficient space in the classroom can make activities meaningful and promote learning (Zosh *et al.*, 2017).

Joyous play makes children feel interested and motivated to learn. The pleasure of children is when they try and do finish the work set for them, for example, when they finish making houses with blocks, they feel happy and their confidence raises. Children's productivity is reduced by sadness and stress; their joy is determined by achieving the ultimate goal whilst playing (Zosh *et al.*, 2017).

2.7 THE IMPACT OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR - YEAR OLD PRESCHOOL CHILDREN

The classroom environment has an impact on the learning of four-year old preschool children as it builds a solid foundation, and this will be elaborated in this section.

2.7.1 The significance of classroom environment

The classroom environment plays an important role in keeping children actively involved and allowing children to be successful within the classroom. Conducive classroom environment keeps the preschool children focused and interested. In this regard, Roy, Frank, DeCamp, Miller and Roy (2015) indicate that the classroom environment provides preschool children with effective instruction and promotes a smooth teaching-learning process that affects the educational sphere, positively. Dewey (1975) and Piaget and Inhelder (1969) add that in the classroom environment children should be engaged in activities that are meaningful for their development and for learning to occur. If learning styles and classroom are well designed, children can interact with each other and influence teaching and learning to a comfortable level (Puteh, Che Ahmad, Mohamed Noh, Adna & Ibrahim, 2015).

There is a relationship between the physical structure of the classroom, such as, room organization, size of space, lighting, table arrangement and psychological aspects, as well as, the interaction between teachers and pre-schoolers and the interaction among themselves. How the physical aspect is organized can limit or encourage interaction

that takes place in the classroom and a display of expected behaviour (Puteh, Che Ahmad, Mohamed Noh, Adna & Ibrahim, 2015). A well-organised classroom should provide care, emotional support and help children to focus on learning. Additionally, a caring classroom environment establishes a safe and academic-focused classroom culture, creates shared norms and values. It also promotes open and honest communication, makes time and place for everyone to get to know one another, facilitates mutual respect, encourages reciprocal care and mutual responsibility, demands academic excellence, and incorporates student-centred cooperative group structures.

Values play an important role in the preschool classroom environment because it is the foundation of a happy life in society. Values cannot be isolated from teacher instructions, as well as the routine lives of preschool children; for example, whilst children play, they usually fight for toys. The teacher must guide the use of polite words that show that one should be patient and wait for his /her turn. The child will learn to respect the instruction of the teacher; in turn, he/she will listen and respect the views of others too. Preschool children are shown where to put their belongings and they learn not to steal other children's belongings during snack time. As preschool children grow, such awareness of values shapes their future (Ulaveri & Venison, 2015).

2.7.2 Features of classroom environment that influence teaching and learning of four-year old preschool children

The classroom environment helps preschool children to develop holistically, therefore, it is of the uttermost importance to consider the suitability of the preschool classroom learning environment (Lynch, 2016). The classroom learning environment includes the layout, arrangement of furniture, facilities, and items on the bulletin boards and the wall. Ahmad and Amirul (2017) indicate that a suitable and well-arranged classroom learning environment makes learning enjoyable, improves the health status of children and affects children's learning abilities. A well-designed classroom creates a community of learners with social interaction and collaboration amongst preschool children and their teachers. In that environment, preschool, children can learn

holistically and are encouraged to be actively engaged in the learning process (Rands & Gansemer-Topf, 2017).

Besides interacting with others and being flexible in the classroom situation, preschoolers feel valued as constructors of knowledge in a safe and secure environment, therefore, if, preschool's classroom environment is furnished with appropriate facilities and materials, better results will be seen from preschool children (Suleman & Hussain, 2014). McMullen (2015) further indicates that if the classroom is not well-arranged and lacks materials and good facilities, it tends to distract the ability of preschool children to concentrate on a task as a classroom environment helps in that regard.

2.7.2.1 Arrangement of furniture

Previously, desks used to be arranged in a row system and there was no space for movement and group-work activity was not possible. That arrangement, however, no longer fits the modern pedagogical paradigm. In a modern flexible preschool classroom environment, furniture is versatile and can be moved easily to help with the creation of multifunctional learning space, to facilitate both group and individual work. Fehlandt (2017) highlights that well-arranged furniture can enhance active learning and flexible teaching. A flexible classroom environment allows chances for the rearrangement of furniture and interaction of preschool children with their peers, as well as allowing varied learning methods and activities (Reinsech, 2018).

Furniture and equipment should be appropriate for the size and age of the children as it has a great influence on their development. Furniture influence how children play and learn, and it also affects their posture (Duncan, Magnuson & Murnane, 2016). On the same note, Rands and Gansemer -Topf (2017) explain that good furniture promotes proper posture and eliminates stress on children because the early years is the biological stage of life where sitting habits are formed. Bad-sitting habits that are acquired in childhood are very difficult to change later in life. In addition, good posture develops better handwriting which helps children to proceed to the next grade (Basye, Grant, Hausman & Johnston, 2015). During the preschool stage, children learn very fast because they have an innate ability to learn as their brains grasp things very fast.

Furniture arrangement plays a significant role in the development of preschool children's brains. Duncan, Magnuson and Murnane (2016) and Basye *et al.*, (2015) show that active learning occurs when furniture is moved from one place to another and this activates the brain; the activation of the brain influences their senses.

Zane (2015) confirms that a well-designed classroom can help children to learn effectively and promote the use of auditory, visual and kinaesthetic senses so that children can develop holistically. As senses are predominant during preschool years, the good arrangement of furniture, such as tables, promotes hands-on exploration. Children in this environment can manipulate clay and glue, explore sensors and motors, compare objects, and build experiments (Bers, Strawhacker & Vizner, 2018).

Pipkin, (2015) endorses that a classroom with well-arranged furniture promotes children's growth, for, when children sit comfortably and have enough personal space to carry through the task, their attention span becomes more involved in what is unfolding. Similarly, Gilchrist, Passy, Waite and Cook (2016) assert that the classroom learning environment of preschool children is influenced by a well-arranged classroom which has low worktables that are large enough for the children. Such tables should be low enough for the children to stand or sit, and wide enough with plenty of room to work on (Pipkin, 2015). In the physical context of preschool children, the spatial environment is important as it allows room for movement, rearrangement and mobility of furniture; it also allows for the utilization of different teaching methods (Pipkin, 2015).

2.7.2.2 Arrangement of wall posters

For the past two decades, wall posters have been gaining momentum. When entering the preschool classroom, wall charts capture the attention of teachers, learners and even the visitors. Children learn to read or count incidentally by associating the print word with the picture in the wall poster or charts. Learning unfolds through memorization. Teachers may use different methods such as lecture methods to impart knowledge to children, to make teaching a more effective teacher uses different teaching aids, therefore, wall posters as one of the teaching aids, influence the learning of preschool children (Shabiralyani, Hasan, Hamad & Iqbal, 2015).

In addition, wall charts with labels keep the classroom environment structured and organized, thus, reinforcing independence in pre-schoolers (Salinas-Gonzalez, Arreguin-Anderson & Alanís, 2015). Displaying children's work has an impact on learning because the teacher is sending a message to the children and families that everyone can contribute and that the children's contribution has a positive effect on the classroom environment and is appreciated (Worthington, 2008).

2.7.2.3 Arrangement of learning area

Preschool children especially the four-year olds, have individual needs, interests, and strengths. To fulfil the interest of preschool children, it is essential to create different learning centres in the classroom environment. Kara (2018) views learning centres as a place where children can work in small groups, to interact with peers and for skills development. In this regard, a learning centre is seen as a well-arranged place with boundaries, having a variety of materials. In the same vein, the United Nations Children's Fund (2018) indicates that in small groups, preschool children learn through play. Whilst children build connections when playing with others, they also learn to communicate ideas, negotiate, resolve conflict and conquer their fears. In addition, there are possibilities of leadership skills development in different learning areas, at the same time (United Nations Children's Fund, 2018).

Children have the right to choose which area to work on and at their own pace (Knopf & Welsh, 2010). Frimpong (2019) views learning corners as a place that makes learners imitate real-life situations, independently, without the teachers. The creation of learning areas needs more space as the class is supposed to be divided into groups (Metin, 2017). Beauty (2013) concurs that dividing the classroom into learning areas is the most effective way to arrange the classroom as it provides a chance for movement, socialization, and problem-solving amongst preschoolers. On the same note, Jirata (2019) suggests that features, such as boxes, mats, low shelves and screens can serve as dividers for the different learning areas. Duncan, Magnuson and Murnane (2016) declare that, in the United States of America, children who attend high-quality preschools are more likely to succeed in their career path and are less likely to attend remedial classes (Duncan *et al.*, 2016). There are various learning

areas identified that can influence teaching and learning of four- year preschool children. These could include - block area, dramatic play area, art area, science area, manipulative and computer area.

- **The effect of block area on learning of four-year old preschool children**

The block area influences the learning of preschool children because it stimulates children, socially, physically, intellectually and in language acquisition. During block play, preschool children, especially, the four-year-olds, begin to understand spatial relationships of positioning words such as, *over, under, off, bottom* and *through*. This will help preschool children in the future as they will be able to construct meaningful sentences. The block area arouses the thinking abilities of preschool children; they start to learn about sizes, shapes, numbers, length and pattern and even, start doing addition and subtraction, incidentally (Knopf & Welsh, 2010).

- **The effect of the dramatic play area on learning of four-year old preschool children**

The classroom environment, especially for four-year old children is important because new learning opportunities are opened. During the preschool period, creativity is revealed through dramatic play. The dramatic play area helps preschool children to express their feelings, healthily. Tombak (2014) and Wood (2014) view dramatic play in the classroom environment of preschool children as an activity that brings happiness, improves social awareness and imagination. The dramatic play area is where pretend play is predominant, for example, children can hold a well-dressed doll and pretend to be a woman who is taking care of the baby (Weisberg, 2015; Taggart, Fukuda & Lillard, 2018).

- **The effect of art area on learning of four-year old preschool children**

A preschool child in the classroom uses creativity to express their feelings and to construct a variety of images. Through drawing, preschool children can communicate their views, for example, the children can draw their family members. Children can draw a picture of a father who is bigger than all members of the family which means

that the father has got more power and the other family members are subordinates. Anim (2012) mentions that children's confidence is improved, discoveries are made, and stories can be articulated through drawing. Drawing helps teachers to give and explain instructions much better than words and it is useful for recording and keeping track of historical events.

- **The effect of literacy area on learning of four-year old preschool children**

The United States of America National Reading Panel in 2000 mentioned that phonic teaching lay the foundation for disabled readers, especially, from preschool until children enter primary school (Bassok, Gibbs & Latham, 2019). On this note, literacy centre is considered a place where children develop the motivation and skills necessary to read and write. Izadpanal and Gunce (2014) show that in the classroom learning environment, the creation of a reading corner, with a well-defined library is a positive attempt to support children's literacy development (Izadpanal & Gunce, 2014). Jirata (2019) asserts that a print-rich environment full of labels, charts and words encourages preschool children to see the value of reading and writing in their daily lives. Bassok, Gibbs and Latham (2019) conclude by endorsing that children who acquire a lot of vocabulary can read better and achieve better in their career pathway.

- **The effect of manipulative area on the learning of four-year old preschool children**

Preschool children are active learners and they need the classroom environment that is warm, comfortable and eye-catching. The classroom learning environment should also provide children with hands-on materials, such as puzzles, dominoes, cubes, logos and pegboards. Children learn best by interacting with concrete objects. Revemann (2008) believes that preschool children use manipulative centre to practise a variety of skills, for example, to enhance problem-solving, critical thinking, and manipulating puzzles. On the same note Wardle (2008) maintains that for children to develop fine motor-skills, teachers have to increase puzzles with big and smaller pieces that children can handle or manipulate, therefore, fine motor-skills enable the four-year-old child to put the puzzles together.

In conclusion, the activities of mixing and matching a variety of textures and surfaces and placing natural and living elements such as plants and water in indoor spaces motivate the children's sensory explorations. When preschool children select textures, like smooth painted walls and windows, rough-like brick and stone surfaces or soft-like pillows and curtain, they are busy increasing their sense of control, self-confidence and their exploration (Izadpanal & Gunce, 2014).

- **The effect of science area on the learning of four- year old preschool children**

Young children are small scientists. The science area influences the learning of preschool children because, naturally, they are born curious about what is happening around them. According to Penn (2017), Early Care and Education Projects encourage preschool children to make observations, ask questions and make predictions, for example, children ask questions such as: *Where does the rain come from?* In addition, children develop their fine motor-skills by taking care of living things such as plants. Children organize their thoughts by also classifying and comparing things.

- **The effect of the computer area on the learning of four-year old preschool children**

Computer usage may have some shortfalls for children, however, Crescenzi, Jewit and Price (2014) view computer usage as a strong promoter of interaction among preschool children. Children can use the area to build new friendship and to increases collaborative work. If computers, for example, can be placed close to each other in the computer centre, preschool children can share ideas, solve problems, and practice expressive and receptive language skills. Computer areas allow competency in counting and sorting. The quiet area also is essential because it is where children can rest or sleep. It allows children to take a break (Worthington, 2008; Obaki, 2017).

2.7.2.4 Influence of intangible elements

Lewinski (2015) shows that acoustics, temperature, colour, lighting are the most influential factors affecting the learning process of the four-year old preschool children as highlighted in the following paragraphs:

- **The impact of acoustics on learning of four-year old preschool children**

Discipline in the classroom environment of preschool children is essential. Young children are active by nature; as such, the Republic of South Africa (1996), South African Schools Act 1996 (SASA) 84 of 1996 8 (1) and (2) stipulates that good school discipline should be reinforced so that learners should learn in an orderly manner and safe environment. If preschool children are not preoccupied with activities, they lose concentration easily and start moving all over in the classroom whilst making excessive noise. Gilavand and Jamshidnezhad (2016) define 'noise' as a sound that hinders people from listening effectively. On the other hand, good acoustics improve children's sense of hearing and concentration, therefore, teachers must ensure that the classroom environment is conducive for learning to prevent behavioural problems from factors, such as noise. Some studies show that noise has a negative effect on learning of four-year preschool children as it disturbs children in their development of language and reading abilities (Macintyre, 2016). In the classroom situation, the noise makes it hard for them to focus on the task being performed and makes the teachers tired easily, as it disturbs the whole class (Hannah, 2013). Teachers are forced to speak loudly which in turn affects their voice production (Gilavand & Jamshidnezhad, 2016). Classroom noise can be absorbed and controlled with soundboards, rugs, ceiling tiles, and other soft elements (Pipkin, 2015).

- **The impact of temperature on the learning of four-year old preschool children**

Global climate change is a serious issue worldwide. There is an outcry of extreme hot or cold temperatures, especially, in the Vhembe District. Meteorologists always make everybody cautious about extreme weather conditions. During hot conditions, people are advised to drink a lot of water, stay in cool places and not to sleep during the day

(Klinenberg, 2015). Araújo-Martinsa, Carreiro Martinsa, Viegasc, Aeleneid, Canoe, Teixeiraf, Paiuxãoa, Papoilag, Leiria-Pintoa, Pedroa, Rosado-Pintoi, Annesi-Maesanoj and Neupartha (2014) endorsed that children under five-years are vulnerable to extreme temperatures. They are easily affected by respiratory diseases, such as asthma due to Carbon level, temperature and humidity; some diseases may lead them to death. Temperature, hence, influences the learning of four-year old preschool children.

High temperature has an impact on the teacher's wellbeing, attentiveness of children, attendance and the performance of children in the classroom environment. Cohen, Gajendran, Lloyd, Maund, Smith, Bhim and Vaughan (2018); Fisk, (2017); Hannah (2013); Madden, Arora, Holmes and Pfauts (2018); Watt, Rahman and Jiang (2019) reporting on New South Wales (NSW) also confirm that well-ventilated classroom reduces absenteeism, improves the performance of preschool children and promotes the health status of four-year old preschoolers.

The Republic of South Africa National Education Policy Act (1996) shows that the thermal conditions of the classroom learning environment affect pre-schoolers' ability to grasp instructions. In South Africa, temperature above 27 degrees Celsius tends to affect pre-schoolers' physiology, reduces their attention span and increases their errors in performing tasks (De Giuli, Zecchin, Corain & Salmaso, 2014). Wargocki and Wyon, (2013) document that when the temperature is high, boys show disciplinary problems whereas the girls continue to behave and to work, even though they may look more restless. Zane (2015) adds that when the environment is pleasing, people who spend most of their time in that space are respected and recognized for the precious work that they are doing. Ahmad, Noh, Adna, Puteh and Ibrahim (2013) emphasize that teachers should ensure that the classroom environment is furnished with adequate windows that allow the inflow and outflow of air, therefore, windows should be wide enough to allow maximum ventilation. Hannah (2013) mentions that a well-ventilated classroom creates an atmosphere conducive to learning.

- **The impact of lighting on learning of four-year old preschool children**

Since light is the most important factor in life, preschools consider light as one of the cornerstones for effective learning. Even God himself said “Let there be light”, and the light came with the purpose of making everything visible and workable (Oqvist & Hogstrom, 2018). Learning takes place through the sense of sight; light in the classroom creates an environment in which the act of seeing is done in a positive manner (Young, de Azevedo, & Cipreste, 2020). The Republic of South Africa in the National Education Policy Act (1996) asserts that good lighting increases the aesthetics and psychological character of learning space and increase pre-schooler’s ability to perceive visual stimuli; their concentration also increases.

Winterbottom and Wilkins (2009) add that improper lighting negatively affects academic achievement and promotes distress and obstruction for preschool children in the classroom. In addition, The Better Placed Design Guide for Schools issued by the New South Wales (NSW) Government Architect's Office shows that classroom should have enough air quality, natural lighting, thermal comfort and acoustic as it has an impact on teachers' wellbeing and learners' attentiveness, attendance and overall performance (Cohen, Gajendran, Lloyd, Maund, Smith, Bhim, & Vaughan, 2018). Similarly, Fisk (2017) confirms that increased classroom ventilation rates improve student performance, reduce negative respiratory health effects and reduce student absence rate.

- **The impact of colour on learning of four-year old preschool children**

The whole universe is embraced in different colours; for example, the food we eat such as carrots, beetroot, and green salads has an impact on individuals and stimulates appetite. The clothes that individuals wear, the colours catch our attention (Danesi, 2018). Colours affect preschool children; the children, especially four-year olds, prefer bright colours because they attract learners' attention and reduce boredom (Stewart, 2018). Research into colours shows that colour stimulates children's cognitive responses and affects behaviour causing mood swings that can have an impact on performance (Barret, Davies, Zhang & Barret, 2017). Warm colours such as reds, oranges, and yellows promote action-oriented activity while cool colours such as greens and blues are associated with quiet, calm learning activities (Pipkin, 2015).

Yellow colour is very essential as it produces a chemical in the brain which is used to generate a happy mood, rapid thinking and stimulate discussion within different learning areas (Pipkin, 2015).

2.8 THE EXTENT TO WHICH CLASSROOM ENVIRONMENT AFFECT LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN

Preschool children have the right to be educated because when they prosper, they become assets of the whole nation (Moss, 2018). They have the right to interact with others in the classroom learning environment. Preschool children are active by nature, they have the curiosity to explore, manipulate and experience new things. The creation of flexible space in the classroom learning environment is essential, however, preschool is also a period in which children enjoy being in a structured setting such as a classroom environment (Ghazi, Ajmal & Saeed, 2018).

Policies, such as the National Integrated Plan for Early Childhood Development have been put in place, however, the quality of the classroom environment, especially, for poor and vulnerable children is a big challenge (Eadie, Stark & Niklas, 2019). The government tries to fill the gap by offering children's grants, but children are still trapped in poverty. Poverty acts as an obstacle that prevents children from accessing good learning environment, especially in rural areas (Onuora-Oguno, 2018). Poverty-stricken province includes Limpopo with 76%, followed by Eastern Cape with 75% and Kwazulu Natal with 67% (Le Mottee, 2016). Khumalo and Mji (2014) note that in Limpopo, KwaZulu-Natal and Eastern Cape rural school children are facing tremendous challenges from poor classroom infrastructure which hinder proper execution of teaching and learning. Achievements of children who reside in deep-rural areas are negatively affected by poverty, lack of support, and lack of resources (van Rooyen, Topper, Strumphier & Shasha, 2019). It is also very difficult for those schools to attract qualified teachers as most qualified teachers prefer to teach in urban areas where there are enough resources.

Early Childhood Development in Nigeria also faces many challenges. Studies reveal that the status of pre-primary education in Nigeria is very poor. One of the core

challenges that pre-primary schools face is insufficient resources, hence, poor learning environment (Omoera & Aiwuyo, 2019). The learning environment is characterized by - inadequate classroom space, furniture and equipment, for teaching and learning. Poorly-motivated teachers are due to the use of outdated teaching methodologies, therefore, the level of the classroom environment for the four-year old preschool children is usually not appealing, especially, in rural areas (Omoera & Aiwuyo, 2019).

2.9 THE PRESCHOOL CLASSROOM ENVIRONMENT IN PUBLIC SCHOOLS

Preschool classroom environment in public schools caters for all children irrespective of their backgrounds and the role of the teacher is to teach, effectively, these children. A detailed discussion is given below.

2.9.1 Teachers and learners as core elements of the classroom environment

The classroom environment plays a significant role because preschool children should be provided with effective instruction that promotes smooth teaching and learning (Yildirin & Akamca, 2017). Bredekamp (2014) concurs that the child is an active learner who wants to find the meaning of the world around him/her by making use of physical, social experiences as well as cultural knowledge. The teacher should design stimulating activities enriched by the teacher's motherly care and general outlook. These are some of the agents of children's motivation and change in behaviour; for example, children should be allowed to sing rhymes, storytelling and use their senses to compare shapes and sizes (Curriculum Development Council, 2017).

2.9.2 Children's learning in a preschool classroom environment

The following figure (Figure 2.1) shows how preschool children learn in the classroom environment. This includes children's learning, pedagogy, curriculum and assessment.

Different components on children's learning will be discussed in detail underneath.

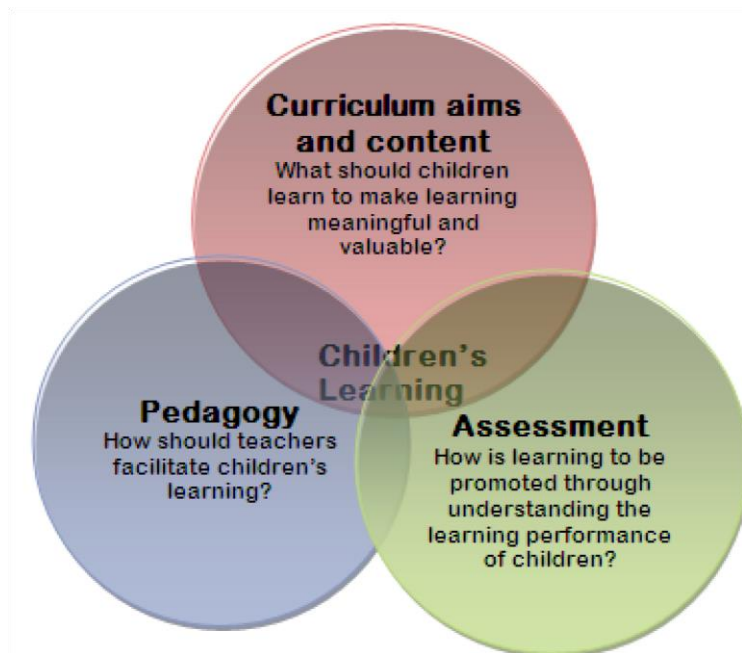


Figure 2.2: The process of learning (Adapted from Curriculum Development Council (2017:30))

According to the Curriculum Development Council (2017), the learning environment involves an interaction among the teacher, learners, curriculum and assessment. The teacher must know the preschool curriculum thoroughly and the entire milestones of pre-schoolers' development. The teacher must create an environment that is conducive to learning and interesting learning areas should be set up to encourage self-directed learning (Curriculum Development Council, 2017). The teacher should be familiar with the daily schedule for preschool children and should design stimulating activities for them (Curriculum Development Council, 2017).

Ezike (2018) views the classroom environment as a stronger predictor of academic achievement than children's hobbies, therefore, the role of teachers is to provide children with suitable facilities for their personal development. In addition, teachers have an obligation of maintaining discipline amongst preschool children. These children cannot develop trust, cannot belong to any group if they are not well

disciplined. Development of trust in the classroom environment by preschool children make them deeply involved in the class activities. Children who have developed trust can trust themselves in the classroom and they have self- confidence (Beauty, 2013). The issue of trust can be enhanced when the teachers in the Early Childhood Development centres create a child-friendly space. Space should be flexible and allow learners to sit in a semi-circle that would promote group discussion and allow for mutually respectful conversation and exchange of ideas; in this space, children are even allowed to sit on round carpets (Curtis & Carter, 2014).

The classroom environment has a positive impact on the learning of preschool children if teachers can manage the classroom effectively. To enhance effective classroom management, the teachers should be able to support the self-management of the children through their daily learning activities; for example, by placing children in different corners or areas to do hands-on activities, such as cutting and pasting, collage, puzzles, while the teacher is monitoring and reminding learners of what is expected of them.

The classroom environment can influence learning if teachers assess children holistically. According to The National Research Council, a well-planned assessment is essential for enhancing instruction in early learning classrooms (Wechsler, Melnick, Maier & Bishop, 2016). Preschool teachers should know their roles and duties in the classroom. Banerjee, Alsalman and Alqafari (2016) indicate that in the preschool classroom, the teacher should act as an observer whilst children are busy doing hands-on activities, such as puzzles and role play in the drama centers. The teachers should be able to identify the weaknesses and strengths of every child and intervene where necessary. Gestwicki (2013) sees observation record as a useful checklist for evaluation of preschool learners. It can be used as an evaluation tool for understanding the experiences, skills and behaviour of preschool children in their classroom environment and for assessing social interaction among children whilst they are playing. The teacher must assess a child's engagement with peers; knowledge of learners should also be assessed by requesting learners to talk about themselves. The evaluation tool can also be utilized for assessing skills that can be done by allowing learners to draw themselves. It is the responsibility of the teacher to collect

all children's work as evidence of their learning and development (Strickland *et al.*, 2014).

2.9.3 Factors that hinder the effectiveness of the classroom learning environment

One common challenge facing teachers is overcrowding amongst preschool children. Unfortunately, due to large class sizes and limited resources, some children in the classroom environment show behavioural problems such as fighting for toys. Social and emotional behaviour influence the learning of preschool children (Obaki, 2017). In the same vein, Obaki (2017) notes that attractive classroom, teacher's motherly care and suitable arrangement of furniture can motivate children to change behaviour. Jones, Bouffard and Weissbourd (2013) contend that the teacher should ensure that preschool children can manage their emotions as they can listen attentively, be focused, less disruptive and take instructions. In contrast, children who struggle also fail to manage their emotions; they are more likely to be off-task and easily engaged in conflict with peers. The role of the teacher is to encourage children's social-emotional skills to establish quality relationships with others; this can be done, for example, by children counting from 1 to 5 then, pausing, to allow their emotion to go down (Jones, Bailey & Jacob, 2014).

Twum (2016) mentions that many challenges hinder the effectiveness of learning of four-year old preschool children. The author identified, for example, inadequate picture cards, number cards, drawing cards, sand tray, picture books in the literacy centre, slates and alphabet charts as some of the challenges that hamper learning. Preschool children learn effectively in a classroom environment full of the above-mentioned items. Children can manipulate different items in different learning centres as preschool children like to move freely in large open spaces, hence, inadequate classroom space with limited learning and teaching materials are some of the major challenges that preschool teachers encounter (Twum (2016).

Sun, Rao, and Pearson (2015) show that a shortage of teaching staff in some preschools impede the effectiveness of the classroom learning environment, thus,

children attend preschools without qualified teachers. Sun, Rao and Pearson (2015) add that those early childhood teachers are perceived as child-minders who do not have professional training. That is the reason they are poorly remunerated and undervalued. Holmqvist (2019) and Kallvik, Lindstrom, Holmqvist, Lindman and Simberg (2015) indicate that, although, South Africa declares the right to quality education for all without discrimination, practically it is failing to provide schools with qualified teachers.

Wangila (2017) identified several challenges that prevent the effectiveness of physical environment on learning of preschool children; these include - inadequacy of teaching and learning resources, financial constraints, lack of government goodwill, poor training of Early Childhood Development Education (ECDE) teachers, insecurity, high pupil-teacher ratio, poor teacher remunerations and the introduction of Free Primary Education (FPE). These problems also include the absence of learning materials and resources, inadequate funds, lack of qualified teachers and inadequate security for children (Department of Basic Education, Department of Social Development & UNICEF, 2010). In addition, Hervie and Winful (2018) contend that the poor performance of teachers in the classroom is also due to the lack of in-service training which impedes the professional growth of teachers (Osamwonyi, 2016).

In Tanzania, the Ministry of education does not fund preschools, rather, they get financial support from parents and Non-Governmental Organizations (NGOs) (Mligo, 2018). Inadequate funds affect the quality of education in preschools and Mligo (2018) has documented that preschool teachers have no access to professional learning opportunities because of financial constraints from lack of bursaries. In addition, Ravhuhali, Mashau, Kutame and Mutshaeni (2018) highlight that most teachers are not professionally developing themselves due to limited time and inadequate financial support from the Department of Basic Education. Regardless of these challenges, some teachers have managed to undergo professional development program for self-enrichment, and aspiration of a better life through earning higher salaries; unfortunately, while in the process, they compromise the quality of teaching and learning offered to preschool learners.

The other challenge identified is a lot of paperwork expected from teachers. Paperwork is overburdening the teachers, as submitted by Bultough, Hall-Kenyon, MacKay and Marshall, (2014) as it hinders the execution of activities in the classroom environment. This overburden may even contribute to stress among teachers. Teacher-stress is another challenge that undermines the teacher's ability to provide quality teaching and support to children in the classroom environment. As shown by Zinsser, Bailey, Curby, Denham and Basset (2013), teachers experience stress in their classroom environment relating to lack of resources and long working hours with low income. They are unable to pay for some of the genuine basic needs in their family. These circumstances lead to a continuous exodus of preschool teachers to other sectors in search of greener pastures. Turnover of teachers affects the quality of activities in the classroom, hence, children's achievement (Cassidy, Lower, Kinter-Duffy, Hedge & Shim, 2011).

There is a challenging worldwide shortage of quality teachers in early childhood development. Most preschool children are taught by child-minders, without any qualifications. This is also a problem in developed countries as Haslip and Gullo (2018) indicate that, in the United State of America, access to specialized teachers in arts, music and physical education is difficult due to financial constraints. Teachers who were doing a certification program in creative arts are forced to eliminate some of the courses at the expense of funding academic subjects such as numeracy and literacy (Haslip & Gullo, 2018). In this regard lack of skills in creative arts can obstruct the four-year old preschool children from developing holistically. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2015) also echoes that Early Childhood Development is one of the investments that the world should focus on for lifelong learning.

Furthermore, studies indicate that the effectiveness of the physical classroom learning environment of preschool children rests upon a strong teaching force and the availability of resources (Chikutuma, 2013). If teachers in the ECD centre are poorly remunerated and undervalued it affects their motivation and morale to work (Chikutuma, 2013). The exodus of ECD practitioners in search for greener pastures, causes ECD centers to operate with skeleton staff (Chikutuma, 2013).

2.10 SUMMARY

The chapter focused on the literature review. The emphasis was on the theoretical framework underpinned by Bronfenbrenner. Bronfenbrenner's theory emphasizes that the child develops in the context of relationships. The effects of the classroom environment on the learning of four-year old preschool children were detailed. The condition of the classroom environments that offer preschool learning and strategies that can be employed to improve the classroom environment were discussed. The classroom environment is composed of different features, such as the arrangement of furniture, wall posters and learning areas. Intangible elements such as temperature, noise, colour and acoustics were also deliberated upon. The chapter concluded with - factors that hinder the effectiveness of the classroom learning environment; development of teachers; improving the assessment of preschool children, improving caring in the classroom, as well as improving activities in the classroom.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3. RESEARCH DESIGN AND METHODOLOGY OF THIS STUDY

3.1 INTRODUCTION

Chapter 2 provided the theoretical framework and reviewed literature on the effects of classroom environment on the learning of four-year old preschool children. This chapter discusses the study setting, research design and methodology including sampling, data collection procedures and data analysis. Ethical considerations and measures to ensure trustworthiness are also deliberated upon.

3.2 STUDY SETTING

This study was conducted in the Sibasa Area. Sibasa is situated in the Vhembe District in Limpopo Province, South Africa. The town is 72 km away from Makhado Municipality (former Louis Trichardt). The majority of the people in Sibasa speak Tshivenda. Preschool children in the area are facing many socio-economic challenges, such as poverty. Sibasa area was chosen because it is located in rural areas where most children are unable to access a good learning environment as they come from a poverty-stricken background.

3.3 RESEARCH DESIGN AND METHODOLOGY

In this section, the research design and methodology are presented covering aspects such as - research paradigm, research design, sampling procedures, data collection and data analysis methods - used to explore the research problem. The above-mentioned concepts are discussed below.

3.3.1 Research paradigm

Kuhn (2012) defines a research paradigm as a set of beliefs and practices shared by researchers that influence how the research questions are asked and investigated. In addition, a paradigm is regarded as a set of exemplars that address the best way to find solutions to research problems. Similarly, McGregor and Murnane (2010) posit that a paradigm is a set of assumptions, concepts, values, and practices that constitute a way of viewing reality.

Creswell (2014) explains that paradigms are shaped by epistemology and ontology. Epistemology is the way we acquire knowledge for a better understanding of the research questions on the effect of classroom environment on learning of four-year old preschool children. Ontology is the way we perceive the reality that surrounds us and the method we can employ to understand reality. In the same vein, Williman (2011) defines epistemology as the way we know things and consider that knowledge as acceptable for that study. By acquiring appropriate knowledge (Epistemology) from different researchers we can apply that knowledge to understanding the reality around (ontology) using different research methodologies and designs. All these help the researcher to understand the effects of the classroom environment on the learning of four-year old preschool children. When knowledge is appropriately used, reality emerges, and different assumptions are articulated and measured (McGregor & Murnane, 2010).

From the epistemological point of view, the researcher used a pragmatic paradigm because it gives the freedom to choose a method that enables the researcher to achieve the objectives and to answer the research questions (Morgan, 2007). Similarly, Patton (2015) explains that methodological openness is needed to answer real-life challenges. Denscombe (2008) adds that pragmatists can use any method as long as the method is chosen and is able to answer the research questions. Pragmatism is used towards solving a real practical problem in the real world, rather than build an assumption about the nature of knowledge (Creswell, 2014). The following reality cycle is used to achieve pragmatic assumptions.

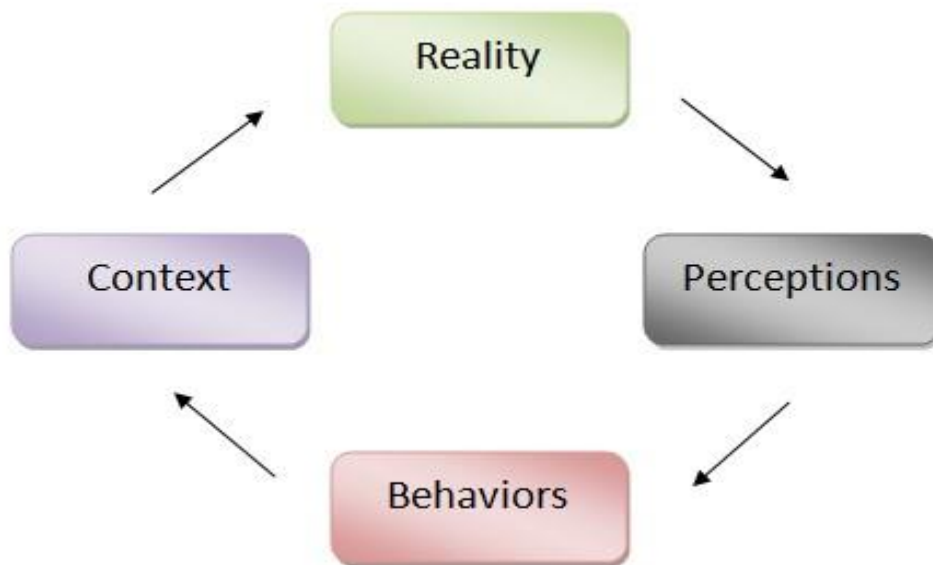


Figure 3.1. The reality cycle; Adapted from Maarouf (2019:7)

The reality cycle adopts a practical point of view that reality is stable. In this study, questionnaires were used to test the theory about reality by giving the respondents questionnaires to complete. The researcher used to face-to-face interviews in the qualitative aspect to discover the reality. Qualitative data were analysed to get a deep understanding of the effect of classroom environment on the learning of four-year old preschool children, therefore, parallel mixed-methods enabled triangulation and cross-validation concurrently (Maarouf, 2019). In this study, the following objectives and research questions were achieved using a pragmatic paradigm.

Objectives of the study were:

- To establish the effect of classroom environment on learning of four-year old preschool children;
- To find out the level to which classroom environment affects the learning of four-year old preschool children;
- To explore the condition of the classroom learning environment in schools around Sibasa circuit providing learning for four-year old preschool children;

- To identify strategies to promote learning of four-year old preschool children based on the classroom environment.

The main research question was: What is the effect of the classroom learning environment on the learning of four-year old preschool children in Sibasa Circuit, Vhembe District?

The following were the sub-questions which the respondents were needed to answer, to achieve the objectives:

- How does the classroom learning environment affect the learning of four-year old preschool children?
- To what extent does the classroom environment affect the learning of four-year old preschool children?
- How is the classroom learning environment for four-year old preschool children in schools in the Sibasa circuit?
- Which strategies can be employed to promote the learning of four-year old preschool children?

The research paradigm guided my choice of research design.

3.3.2 Research design

McMillan and Schumacher (2010) define the research design as the plan that describes the conditions and procedures for collecting and analysing data. It differs from the research methods which the researcher defines as the procedures used to collect and analyse data. Du Plooy-Cillers, Davis and Bezuidenhout (2016) show that a research design is the complete plan for the entire research study. It guides the researcher on what to do -whether formulating questions or hypotheses to obtaining information and completing one's data analysis. In this study, the convergence parallel mixed-method design was employed wherein qualitative and quantitative were used concurrently (Creswell, Klassen, Plablo Clark & Clegg Smith, 2011). Convergence

parallel mixed-method was used to gain in-depth information about the effect of the classroom on the learning of four- year old preschool children (Demir & Pismek, 2018).

The following diagram shows how convergence parallel mixed-method design works.

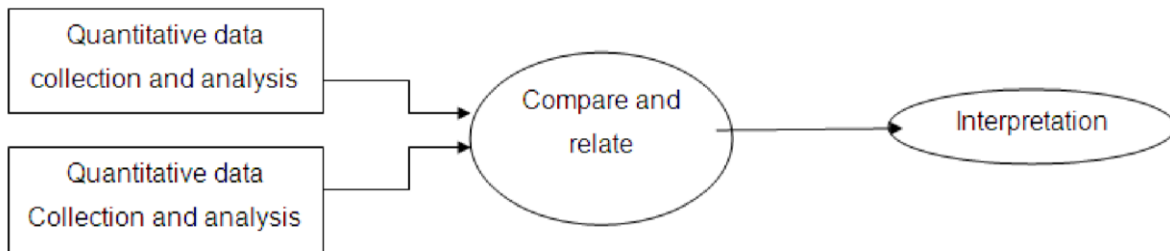


Figure 3.2 Convergence parallel mixed-method design; Adapted from Demir & Pismek (2018: 124)

The validity of convergence parallel mix- method design is measured by comparing (triangulating) quantitative results with qualitative findings (Demir & Pismek, 2018). Both methods weighed equally but were analyzed separately, but in the end, the results were interpreted concurrently, being supported by literature (Demir & Pismek, 2018).

3.3.3 Research methodology

Creswell (2014) describes research methodology as a systematic procedure used by the researcher for solving research problems through selecting the appropriate data collection strategies, analysis procedure and interpretation. Similarly, Hay (2016) regards methodology as a logical plan that provides the researcher with working tools for solving research problems. In addition, McMillan and Schumacher (2010) maintain that a methodology is an approach that is used by researchers to investigate research problems to obtain data and findings. A methodology, therefore, can be described as different methods that work concurrently to supplement each other to address different

aspects of the phenomenon being studied, so that suitable findings could be attained (Tashakkori & Teddie, 2010).

In this study, both qualitative and quantitative approaches were used because they complement each other. The researcher used both methods for a better understanding of the research problem on the phenomenon being studied which entailed the exploration of the effects of classroom learning environment on four-year old preschool children. This statement is supported by Chandrasekharan (2019) who echoes that a mixed-method is useful for answering complex questions that can be encountered in a phenomenon being studied. The study adopted mixed-methods research to accumulate and analyse data, integrate the findings and draw conclusions in a single study (Creswell & Clark, 2011). The researcher used different data collection instruments, such as face-to-face interviews (qualitative) and questionnaires (quantitative) to attain a complete picture of the research findings and assumptions. The mixed-method allows for triangulation during the interview session; answers from participants are supplemented by the findings from the questionnaires (Chandrasekharan, 2019). In so doing, the findings from different methods produce a complete picture of the phenomenon, thereby minimizing the bias (Denscombe, 2008; Creswell, 2014). Both methodologies (qualitative and quantitative) are dealt with in the next sections:

3.4 QUANTITATIVE DATA COLLECTION

Wyse (2011) shows that quantitative research is used to generate results from a large sample population. It is also used to uncover patterns in data. Jones, (2012) supports that quantitative research enables the researcher to measure and analyse data. Apuke (2017) defines quantitative research as a method that requires the operation and investigation of numerical data using numbers, in trying to answer questions like *whom, how much, what, and where*. The quantitative method allowed me to administer and evaluate quickly the effects of the classroom environment on the learning of preschool children using a survey questionnaire. The method also gave me an accurate and reliable measurement that allowed for statistical analysis of the effects of the classroom environment on the learning of preschool children (Goertzen, 2017).

3.4.1 Sampling procedure

Simple random sampling was followed in the sampling of 200 respondents from preschools in the Sibasa Circuit. Creswell (2014) defines 'random sampling' as a procedure that allows every member of a population an equal chance to be selected. A list consisting of all teachers from preschools around the Sibasa Circuit was obtained from the circuit office. Using the Rao soft Sample size calculator, tolerating a margin error of 5% to give a 95% confidence level from a total population of 400 teachers, the sample consisted of 200 participants (rounded off from 197). The researcher picked up every second respondent from the list compiled. The list consisted of the respondents of different ages and gender. All 200 respondents were requested to respond to the questionnaire that was used for gathering data.

3.4.2 Quantitative data collection instrument

The questionnaire for data collection was one of the instruments employed. A questionnaire is a set of questions on a given topic and is best used to collect information that is not available elsewhere, as a secondary resource (Kabir, 2016). According to Locke, Silverman and Spirduso (2010) a questionnaire is a tool for collecting and recording information about a particular issue of interest. It is mainly made up of a list of closed-ended questions and includes clear instructions and space for answers or administrative details. The researcher developed the questionnaire with the help of a specialist in quantitative methods.

The questionnaires were pretested with ten respondents. Before the collection of the questionnaires, appointments telephonically were made to set the date for collection. The questionnaire was divided into five sections. The first section is composed of questions related to the demographic profile of the respondents. The second section is composed of questions about the effect of the classroom environment on learning of preschool children. The third section has questions about the extent to which the classroom environment affects the learning of preschool children. The fourth section is composed of questions about the condition of the classroom in schools that offer

learning for four-year old preschool children. Lastly, are questions concerning the strategies that can be used to improve the classroom environment.

Items in the questionnaires are on a five-point Likert-type scale. LaMarca (2011) mentions that a Likert Scale does not require the respondents to give a simple and tangible *yes* or *no* answers. It also does not compel the respondents to take a stand on a particular topic, however, the scale allows them to respond in terms of a *degree of agreement* making it easier for the respondents to answer the questions.

3.4.3 Quantitative data collection procedure

To manage the acquisition, the researcher handed to the principal the questionnaires who delivered them to the teachers. Permission to conduct the study from the following relevant gatekeepers was requested from - the Department of Education: Provincial level; the District Senior Manager of Education: Vhembe District; the Education Circuit Manager of Sibasa Area and from the principals of the selected schools. Copies of permission letter were also given to the principals of the selected preschools. After permission was granted, informed consent from the respondents was obtained after I had explained the purpose of the study and outlined the handling procedure for the data to be collected. Questionnaires were completed anonymously and the respondents were at liberty to withdraw from the study if they wish to do so, at any time. After the purpose of the study was stated, the respondents were assured confidentiality and anonymity. Following the signing of the consent form, the researcher handed the questionnaires to the teachers and arranged a suitable date for collecting the completed questionnaires. Before the collection of the questionnaires, an appointment telephonically was done and arrangements were made with them for the date for collection. As stipulated in the permission granted by the Department of Education at the Provincial level, my research did not disturb school activities. Before taking the questionnaires away, they were checked for completeness to reduce the risk of missing data. If some sections were not completed, I politely requested the respondent to complete the section.

3.4.4 Data analysis

All data were checked and edited before statistical techniques can be applied. Data were verified for consistency and accuracy. Collected data was gathered and entered into a statistical package (SPSS) and the analysis used was frequency counts and percentage on the effect of classroom environment on the learning of four-year old preschool children. Rigor was maintained throughout the entire process of the quantitative approach by considering the principles of reliability and validity.

3.4.5 Validity and reliability

To ensure trustworthiness in quantitative research the concepts of validity and reliability are presented in the sections that follows:

3.4.5.1 Validity

Heale and Twycross (2015) highlight that validity in quantitative research is concerned with how data is interpreted, and the appropriateness of the research method and techniques used. McMillan and Schumacher (2010), see validity as a situation-specific concept that locates its focus on the purpose, population and situational factors in which measurement takes place. The researcher developed the questionnaire ensuring that there was a correlation between the questions designed and the research objectives of the study. Triangulation is another way that was used to improve validity and reliability. Related concepts from questionnaires and interviews were engaged to find the accuracy and consistency of the findings, therefore, cross-validation was used when comparing the findings from both methods. Validity was assured by the supervisor who is an expert in education and quantitative research. Corrections were effected accordingly before the questionnaire could be distributed to the respondents.

3.4.5.2 Reliability

McMillan and Schumacher (2010) posit that reliability is concerned with how sound the investigation is carried out. It also relates to the consistency of measurement. In this study, to ensure reliability, pre-testing of the questionnaire was done with ten respondents who did not form part of the research sample. The researcher established external reliability by obtaining similar results from the majority of respondents. Only a few questionnaires from the respondents were adjusted where they were necessary. The researcher made sure that there was always a correlation between the questions designed in the questionnaire and the research objectives.

In this study the raw data will be kept on the effect of classroom learning environment on four-year preschool children learning as references, for any interested person and researchers to cross-check or verify. The detailed information about the effect of classroom learning environment for preschool children, gave opportunities to interested parties to gauge the extent to which the study findings are transferable to other situations.

3.5 QUALITATIVE DATA COLLECTION

Merriam (2009) indicates that a qualitative approach can be followed when studying things in their natural settings and how people make sense of their world and the experiences they have in the world. Qualitative research is mostly conducted in natural settings (Kumar, 2019; Creswell, 2014; Nieuwenhuis, 2016). In this study, data were collected through a qualitative research approach to explore the effects of the classroom environment on learning of four-year old preschool children. Qualitative research is used to explore things, events, or phenomena (Namey, 2019). Creswell (2014) contends that a qualitative research is an approach that seeks to explore and understand the meaning of the problems that people encounter in everyday life. Similarly, Domegan and Fleming (2007) assert that in a qualitative approach, the researcher wants to explore and to discover things about the real problem at hand. The qualitative approach allowed me to discover and understand the effectiveness of the classroom learning environment of preschool children.

Yin (2011) indicates that qualitative methods are aimed at gathering an in-depth understanding of human behaviour and the reasons why such behaviour occurs in that manner. Mcmillan and Schumacher (2010) contend that the qualitative approach is used by researchers to understand people, and the social and cultural contexts within which they live by making use of observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions. On the same note, some studies by Kumar (2019) and Creswell (2014) indicate that qualitative research is mostly conducted in natural settings. Qualitative researchers are also encouraged to be reflexive, characterized by ongoing self-critique and self-appraisal during which the researcher explores personal feelings and experiences (Creswell and Poth (2018). Reflexive practices establish rigor, or trustworthiness, in qualitative research (Creswell & Poth, 2018). In this study, the natural setting is the preschool classroom environment where in-depth information was gathered from the teachers using face-to-face interviews. Furthermore, this research approach is primarily concerned with the life experiences of the participants, hence, the participants articulated the real things they were encountering. The emotions of the participants could be seen, unlike quantitative where participants use numbers. Procedures for collecting the qualitative data are discussed in the sections that follows:

3.5.1 Population

For this study, the target population included preschool teachers involved in the provision of preschool education within the Sibasa Circuit. Williman (2011) describes the 'population' as the total number of things that possess some common characteristics which are the subject of the study. In research, we mostly use a target population who Alvi (2016) describes as all members who meet the condition identified for a research inquiry.

3.5.2 Sampling procedures

MacMillan and Schumacher (2010) note that purposive sampling is used to increase the operation of obtained information from a small sample. As indicated by Brewerton and Millward (2012) individuals are selected from the population according to specific characteristics in that group. The participants were chosen based on the experience and knowledge they have relating to the study. For the qualitative approach, purposeful sampling was used to select six participants. Creswell (2014) emphasizes the need of establishing a pre-set criteria for eligibility to participate in the study. For this study, three preschools were selected considering the following criteria:

- Being within the Sibasa circuit area;
- Located in rural contexts, and
- They provide preschool education for four-year old children.

For the research participants, six preschool teachers who have at least three years of teaching experience in preschool were selected. Only six participants were selected because the study employed convergence parallel mixed-method design wherein questionnaires were also used to increase the in-depth understanding of the effect of classroom environment on learning of four-year old preschool children. The reason for setting an inclusion criterion of three years is that the participants were likely to be knowledgeable and informative about the effect of classroom environment on learning of four-year old preschool children (Creswell, 2014; McMillan & Schumacher, 2010). In the same vein, Leedy and Omrod (2010) mention that experienced participants who can offer data that are related to the phenomenon being studied, should be selected.

Demographic data of participants are explained in the table below: -

Participants Codes	Gender	Age	Teaching Experience	Highest Qualifications
1. Teacher No: 1	F	46	19	Diploma in Early Childhood
2. Teacher No: 2	F	40	15	Masters in Early Childhood Development
3. Teacher No: 3	F	57	35	Educare level 5
4. Teacher No: 4	F	35	7	Degree in Early Childhood Development
5. Teacher No: 5	F	52	30	Primary teacher's Diploma
6. Teacher No: 6	F	32	9	Degree in Early Childhood Development

3.5.3 Qualitative data collection

This section on data collection addresses the interview schedule.

3.5.3.1 Interview schedule

The interview schedule was preferred because it improves the accumulation of accurate data. An unstructured face-to-face interview was employed to get a wide picture of the study (Korstjens & Moser, 2018). In this study, four interview questions guided by the research objectives were written down on the interview schedule. The following questions guided the interview sessions:

- How do classroom learning environments affect learning of four-year old preschool children?
- To what extent does the classroom environment affect the learning of four-year old preschool children?
- What are the conditions in the classroom learning environment for four-year old preschool children in schools, in the Sibasa circuit?
- Which strategies can be employed to promote learning of four-year old preschool children? (Refer to Annexure 2).

3.5.3.2 Data collection procedure

Permission was sought from the Department of Education, provincial and regional, through a letter. Face-to-face interviews were conducted in three preschools within the Sibasa Circuit. Another letter was handed to the Circuit inspector. Permission was sought from the principal to allow the visit to preschools to do face-to-face interviews. Moser and Korstjens (2018) elucidate an interview as the interactions between the interviewer and the participants, based on questions. In this regard, Moser and Korstjens (2018) describe face-to-face interviews as an individual conversation that occurs between the participant and the interviewer. Gill, Stewart, Treasure and Chadwick (2008) posit that the purpose of a research interview is to explore the views, experiences, beliefs, and motivations of individuals on a specific matter.

Permission from the participants was also sought. The researcher visited those three preschools after making an appointment and the participants signed consent forms as an indication that they would involve themselves in the study and I assured them that they were at liberty to withdraw at any time of the study if they wished to do so. The aim was elaborated to them about the study, that is, the effect of classroom environment on learning of four-year old preschool children. The researcher sought permission from the participants to use the audio recorder so that later the recordings will be transcribed verbatim. The place and time to conduct an interview were arranged with the participants, before the interview took place. A well-ventilated classroom was

arranged; I introduced myself before the interview started and elaborated on the purpose of my study that, it is to explore the effects of classroom environment on learning of four-year old preschool children. Each of the interview sessions ranged from 30 to 60 minutes long. The main open-ended questions were used during face-to-face interviews followed by probing to get in-depth information from the participants.

3.5.3.3 Data analysis

The study used thematic data analysis wherein themes were deduced after reading and re-reading the transcripts (Maguire & Delahunt, 2017). The systematic process of coding was used, thereafter, categorizing and interpreting of data to provide explanations of the phenomenon of interest in the study (Bogdan & Biklen, 2007). Data were transcribed verbatim by listening to the audiotape several times. A laptop was used to write the transcribed data, which was then read and reread from the laptop. After transcribing, themes were identified, categorized and then coded. Similarities and differences were identified to develop codes for the interpretation purposes. Identified themes were grouped in their respective categories; sub-themes, were necessary also were formed.

3.6 MEASURES TO ENSURE TRUSTWORTHINESS

Maree (2007) regards trustworthiness as the conceptual soundness on which the value of a qualitative research may be judged. To achieve trustworthiness, the researcher employed the following criteria by Creswell (2014), namely – credibility, dependability, conformability and transferability.

3.6.1 Credibility

Pitney and Parker (2009) refer to credibility as the extent to which research findings are believable. To ensure credibility, the researcher triangulated interview results and the findings from questionnaires to ensure that the research questions were answered. Credibility was also achieved by member checking with the participants then, the researcher went back to the participants and verified the accuracy and completeness

of data collected on the effect of classroom environment on learning of four-year old preschool children.

3.6.2 Dependability

To achieve dependability, face-to-face interviews were used as data collection strategies. This enabled the researcher to establish if the results obtained from face-to-face interviews and questionnaires on the effect of the physical classroom learning environment for four-year old preschool children, are related. A combination of the results of the interview and questionnaire to enhance the validity of the study, therefore, was done. Should the findings obtained using different methods correspond, then that indicates the validity of such findings and then conclusions can be drawn (Silverman, 2015).

3.6.3 Conformability

Cohen, Manion and Morris (2007) regarded conformability as the degree to which the research findings are the focus of the inquiry and not the researcher's biases. To comply with the requirement for conformability, audit trails were used; in addition, the researcher fully articulated the approaches to data collection, decisions about what data to collect, and the documentation of the collected data, so that another researcher may arrive at the same conclusions when analysing the data and confirm the results. This showed avoidance of bias.

3.6.4 Transferability

Transferability refers to the degree to which the results of qualitative research can be transferred to other contexts or settings, with other participants' (Korstjens & Moser, 2018). When the researcher conducted the interview on the effect of classroom environment on learning of four-year old preschool children and got the results, some participants may also want to conduct the same study elsewhere, it should give them the same results; this is the notion of transferability.

In this study, raw data was kept on the effect of classroom learning environment for four-year preschool children as references, for any interested person or researchers to cross-check or verify. The detailed information about the effect of classroom learning environment for preschool children, gave opportunities to interested parties to gauge the extent to which the study findings can be transferable to other situations.

3.7 ETHICAL CONSIDERATIONS

The following ethical issues were adhered to in this study, namely, permission to conduct a research, informed consent, confidentiality, anonymity and voluntary participation.

3.7.1 Permission to conduct research

Permission to conduct the research was granted by the Ethics Committee. The ethical clearance certificate was shown to the principal as evidence that permission was granted by the University's Ethics Committee to conduct the study (refer to Annexure 9). The researcher also requested permission to conduct research from the Department of Education, provincial, regional and at the circuit level, by writing a letter and furnishing them with an ethics clearance certificate, completed proposal and proof of registration. After being allowed to use the site by the school's principal, arrangements were made for conducting the interview sessions.

3.7.2 Informed consent

According to Cohen, Manion and Morrison (2011), informed consent is how individuals decide whether to participate in an investigation after being informed. Participants were given an informed consent form before participation in the study (refer to Annexure 8). The role of the participants during the interview was of an interviewee and to fill in the questionnaire. In this study, the participants signed the informed consent form to indicate their participation in the study upon agreement and after an explanation of the purpose of the study, procedure and benefit of the study. The

consent forms emphasized the voluntary nature of participation and the absence of punishment for withdrawing from the study before completion.

3.7.3 Confidentiality

According to Anderson (2013), confidentiality refers to control of access to information and assurance that the data will not be divulged nor shared with other people who have not been given the mandate to have access. In this study, all information gathered was safeguarded by not using the participants' names but numbers. The names of the teachers and preschools were not given but just coded. The participants will strictly remain unknown as they were given codes, such as Teacher no: 1 and Teacher no: 2. Participants 'rights to privacy' were respected and protected. In this study, all participants were assured that the information provided will be confidential as no unauthorised person will have access to it not disclosing any information. To ensure confidentiality, the participants' interview was conducted in a classroom with no other person present.

3.7.4 Anonymity

According to Cohen, Manion and Morrison (2011), anonymity is concerned with ensuring that information provided by the participants should not reveal their identity. In this study, anonymity was maintained by assigning codes to the research participants when collecting, analysing and reporting data. Participants were given assurance that the data collected from them would be treated confidentially. Participants' protection from harm should be assured regardless of whether they are volunteering or not, however, to manage potential emotional tensions, participants were assured that they were free to voice their dissatisfaction with any aspect of their involvement. The dignity of the participants would not be diminished as there would not be any disclosure of information to any supervisors. The researcher assured all participants who were involved in the interviews, anonymity (Reid, Brown, Smith, Cope & Jamieson, 2018).

3.7.5 Voluntary participation

Voluntary participation is part and parcel of the informed consent principle. The consent forms emphasized the voluntary nature of participation and the absence of punishment for withdrawing from the study before completion. Cohen, Manion and Morrison (2011) refer to informed consent as the way in which individuals decide whether to participate in an investigation after being informed. The researcher requested them to participate willingly; also permission to use an audio recorder before the interview was sought and granted.

3.8 SUMMARY

This chapter highlighted the research design and methodology. It showed the pragmatic paradigm where the mixed methods were used in this study. It also identified the study setting and indicated that a questionnaire and an interview schedule were designed as an instrument for data collection. The data collection procedures, as well as, the measures to ensure trustworthiness were discussed. The chapter that follows details the presentation and discussion of the results.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF THE RESULTS

4. RESULTS ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

Chapter Three focused on the research design and methodology. This chapter focuses on the analysis and the discussion of the findings from the questionnaires and the face-to-face interviews on the effect of classroom environment on the learning of four-year old preschool children. Quantitative data was analyzed by a computer using Statistical Packages for the Social Sciences (SPSS) program, version 25 and the results were presented using tables. Qualitative data was presented with the help of extracts from the participant to support the discussion. Both quantitative and qualitative data were used concurrently and supplemented by the literature. The following research objectives guide the discussion and the presentation of the results:

-

- To establish the effect of classroom environment on the learning of four-year old preschool children;
- To find out the level to which classroom environment affects the learning of four-year old preschool children
- To explore the conditions of the classrooms in Sibasa Circuit which are providing learning for four-year old preschool children, and
- To identify the strategies to promote learning of four-year old preschool children based on the classroom environment.

4.2 QUALITATIVE DATA ANALYSIS

In the qualitative aspect, thematic analysis was used and the process of coding and categorizing were employed. Interviews were recorded using audiotape and later were transcribed verbatim after listening to the audiotape several times. Codes were used

to identify important features and themes were realized. Face-to-face interviews were used to understand the effect of classroom environment on learning of four-year old preschool children.

4.2.1 EMERGING THEMES FROM QUALITATIVE DATA ANALYSIS

The list of different themes that were inferred from face-to-face interviews is as follows:

THEME 1: Well-arranged classrooms promote learning

THEME 2: Appropriate furniture promote good posture and handwriting

THEME 3: Well-ventilated classrooms promote good health

THEME 4: Appropriate-age furniture

THEME 5: Different corners promote learning

THEME 6: Wall charts re-enforce reading

THEME 7: Group-work activities enhance social interaction

THEME 8: Development of fine-motor skills

THEME 9: Lack of qualified teachers

THEME 10: Lack of resources

THEME 11: In-service training

THEME 12: Assessment

Table 4.1 shows a summary of research questions and themes

NO	MAIN RESEARCH QUESTIONS	THEMES
1	How does the classroom learning environment affect learning of four-year old preschool children?	1,2,3,4,5,6,7 8
2	To what extent does the classroom environment affect learning of four-year old preschool children?	7,8
3	From your experience, how do you view classroom environment of preschool children in Sibasa Circuit?	9,10
4	What support do preschool teachers need in order to improve the classroom learning environment of preschool children?	1,12

4.3 DEMOGRAPHIC PROFILES OF THE RESPONDENTS (QUANTITATIVE)

The main aim of the study was to explore the effect of classroom environment on the learning of four-year old preschool children by the respondents. The demographic profiles focused on gender, age, academic qualifications and teaching experiences.

Results on gender distribution are presented in the section that follows:

4.3.1 Gender distribution of respondents

Gender is a state of being male or female concerning social and cultural roles. Respondents of this study were male and female. Table 4.2 represents the gender distribution of respondents and the ratio.

Table 4.2: Gender distribution of the respondents

Item	Frequency	Percentage
Male	22	11
Female	178	89
Total	200	100

The results indicate that the majority (89%) of the respondents were female teachers in these preschools. This may have an impact on the results since the sample is dominated by females. It may suggest that males are reluctant to teach four-year old preschool children, however, these results are not surprising as four-year old preschool children need motherly care, attention and time. In this vein, Phatudi (2017) echoes that preschool children need to be nurtured by a teacher who will provide motherly care, be full of love and patience.

4.3.2 Age distribution of respondents

Preschool teachers of diverse ages responded to the questionnaire. Table 4.2 presents the age distribution of respondents.

Table 4.3 Age distribution of the respondents

Item	Frequency	Percentage
20-29 years old	19	9.5
30-39 years old	40	20
40-49 years old	69	34.5
50-59 years old	60	30
60 years and older	12	6
Total	200	100

The results show that most teachers who are teaching preschoolers are between the ages of 40-49 years and have the highest frequency of 69 which is 34.5% of all the

respondents. This suggests that teachers of the ages of 40 and above, have a passion for teaching four-year old preschool children.

4.3.3 Academic qualification

Academic qualification was one of the variables considered in this study. Table 4.3 shows how the respondents are academically qualified. Teachers are supposed to have relevant qualifications for effective teaching in a preschool classroom, as shown in Table 4.4.

Table 4.4: Academic qualifications

Item	Frequency	Percentage
Educare level 5	54	27
Diploma in Early Childhood Development	47	23
Degree in Early Childhood Development	36	18
Senior Primary Teachers Diploma	28	14
Junior Primary Teachers Diploma	35	17.5
Total	200	100

The results showed that the majority (27%) of the respondents have Educare level 5 while 23% of the respondents have a Diploma in Early Childhood Development. This suggests that these preschool teachers have a low level of qualification, although, for a preschool classroom to be effective highly-qualified teachers, with specialized knowledge are needed. With the same sentiment, Wechsler, Melnick, Maier and Bishop (2016) proposed that for preschool teachers to teach effectively a bachelor's degree should be a prerequisite.

4.3.4 Teaching experience

The teaching experience was one of the variables for this study, hence, the respondents were asked to mention their teaching experiences. Responses are shown in Table 4.5.

Table 4.5: Teaching experience

Item	Frequency	Percentage
0 - 10 years	51	25.5
11 - 20 years	63	31.5
21 - 30 years	54	27
31 - 40 years	31	15.5
41 years and more	1	0.5
Total	200	100.

The results revealed that most of the respondents have 10 years and more of teaching experiences. This is in line with the suggestion that the more experienced teachers are with expertise and knowledge, the better the results produced in the learning environment. The Curriculum Development Council (2017) notes that teachers with curriculum knowledge of teaching preschoolers are needed.

4.4 RESEARCH QUESTION 1: HOW DOES THE CLASSROOM LEARNING ENVIRONMENT AFFECT THE LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN?

The themes identified on the effect of classroom environment on the learning of four-year old preschool children were guided by the four objectives as outlined in section (4.1). Themes that emerged are the following:

4.4.1 Classroom design and promotion of learning and development of four-year old preschool children

4.4.2 The arrangement of furniture for preschool children

4.4.3 Sizes of furniture for four-year old preschool children

4.4.4 The effect of different corners on learning of four-year old preschool children

4.4.5. Availability of wall charts

4.4.6 The impact of noise levels on learning of four-year old preschool children

4.4.7 Classroom ventilation

A detailed discussion of these different themes is given in the sections below.

4.4.1 Classroom design and promotion of learning and development of four-year old preschool children

Table 4.6 indicates responses of the participants on the statement about the classroom environment and promotion of learning and development of four-year old preschool children.

Table 4.6 Classroom design and promotion of learning and development of four-year old preschool children

Item	Frequency	Percentage
Strongly agree	116	58.
Agree	75	37.5.
Not sure	6	3
Disagree	2	1
Strongly disagree	1	0.5
Total	200	100.

The main finding indicates that classroom design promotes learning and the development of young children. Table 4.6 above shows that the majority (58%) of the respondents indicated that they are *strongly agreeing* with the statement whilst (37.5%) *agreed* that a well-designed classroom promotes learning and development of four-year old preschool children.

These results from the questionnaire differ from those of the interviews, as the results from the interviews indicate that classrooms in rural schools are not conducive to learning. Studies conducted by Castro, Almqvist and Granlund (2015) constantly found that there is a relationship between the design of classroom and learner development. The classroom works as an ecosystem where there is a mutual relationship between the teachers, children and different materials aimed at developing the child holistically. Ahmad and Amuril (2017) posit that a well-arranged classroom learning environment makes learning enjoyable, improves the health status of children and impact positively on the children's learning abilities. Participants agreed on the value of the classroom environment, however, the condition under which they are working is different from what is required. The results from the interviews show that most classrooms in rural preschools at Sibasa Circuit are not well arranged because children are overcrowded and there is no space for creating different learning areas. This is supported by the following extract:

Teacher No 1: I cannot divide the classroom into different groups because they are too many. This hinders interaction between the learners. So, my class is not well arranged. I'm not satisfied with my class.

In Table 4.6 (0, 5%) of the respondents indicated that they are *strongly disagree* with the statement. This may suggest that only a few teachers are not able to arrange the classroom well. Obaki (2017) in his studies maintains that overcrowding amongst preschoolers results in social and behavioural problems. This affects the achievement, reputation of the class and development of preschool children.

4.4.2 The arrangement of furniture for preschool children

Table 4.7 presents the arrangement of furniture for preschool children which allows flexibility

Table 4.7: The arrangement of furniture for preschool children allows flexible movement

Item	Frequency	Percentage
Strongly agree	97	48.5
Agree	94	47.
Not sure	7	3.5
Disagree	1	0.5
Strongly disagree	1	0.5
Total	200	100

The main finding is that the arrangement of furniture for preschool children allows flexible movements of learners. The results in Table 4.6 indicate that the majority (48.5%) of participants *strongly agree*, whilst (47%) *agreed* that the arrangement of furniture for preschool children has a negative effect on their movement in the classroom and that they need enough space to move. This is in line with the literature review in which Cheptonga (2017) states that well-arranged furniture influence how children play and learn.

The arrangement of an appropriate furniture in the classroom plays a significant role in learning; the teacher's interviews also revealed that the environment can affect learning. The children need enough space to move freely and explore new things. The teacher's views are supplemented by the following extract:

Teacher No 1: *Again the classroom environment can affect learning if there is no flexible movement inside the classroom. Remember that a preschool learner learns through play. They need a flexible classroom learning environment where they can move freely without any disturbance.*

Teacher No 3: *Classroom learning environment is a place where four-year-old children feel safe, feel free to explore new things. My kids are at liberty to move from one area to another to learn new things in my classroom.*

The majority, (96%), of respondents *strongly agreed* that the arrangement of the furniture in the classroom allows for flexibility of preschool children, this may suggest that the remaining (3.5%) had a bad impression of the arrangement of furniture in the classroom as it did not allow children to move freely in the classroom. As far as the teachers' understanding is concerned, the movement of children in the classroom is associated with ill-discipline, therefore, the teachers may adopt the traditional style of arranging desks in rows where flexible movement would not be possible. The learning of preschoolers would then be implicated due to lack of proper arrangement of furniture in the classroom as there would be no space to manipulate learning materials, such as toys. Ng'asike (2014) maintains that teachers in African countries such as Lesotho cannot arrange a classroom effectively as the children lack furniture to sit on.

4.4.3 Sizes of furniture for four-year old preschool children

The size of furniture affects the learning of four-year-old preschool learners. Table 4.8 indicates the reaction of the respondents on the appropriateness of the size of furniture for four-year old preschool children and the effect on learning.

Table 4.8 the appropriate size of furniture for four-year old preschool children affect learning

Item	Frequency	Percentage
Strongly disagree	73	36.5
Disagree	92	46.
Not sure	13	6.5
Agree	17	8.5
Strongly agree	5	2.5
Total	200	100

One of the main findings was on the appropriate size of furniture for four-year old preschool children that affect learning. The results indicate that (36.5%) of the respondents *strongly disagree*, whilst (46%) *agreed* that the size of furniture influenced learning of four-year old preschool children. This is inconsistent with the literature, as Cheptonga (2017) states that well-arranged furniture improves creativity amongst young children, as they become more focused on the task.

The results from questionnaires differ from those from the interviews; this may suggest that most teachers have no experience of teaching preschool children as they seem to be comparing preschool children with primary children. They lack knowledge of the appropriate size of furniture for preschool children. They seems to have forgotten the developmental domain of preschool children especially the physical domain which deals with the health status of young children. This suggests that most children in public preschools are using big chairs and tables that promote bad posture. Rands and Gansemer-Topf (2017) reveal that bad sitting habits that are acquired in childhood are very difficult to change later in life; children may end up suffering from skeletal diseases.

The results from the participants' interviews indicate that the size of furniture has a role in the learning of children as it promotes good handwriting, good posture and their academic development. The participants indicated a challenge with preschools that

are using inappropriate size furniture in their classroom. This is in line with theory and literature; Montessori (1912) posits that early childhood classroom needs to have child-sized furniture with open shelves and high-quality materials. Well-designed furniture that is appropriate for preschool children promotes growth while making them sit comfortably. Rands and Gansemer-Topf (2017) concur that appropriate furniture allows for good posture as children must be stable and anchored whilst they are doing hands-on activities; good furniture promotes proper posture and eliminates stress on children. The remarks from the participant's interview are supported by the following extracts:

Teacher No 2: Furniture in the classroom should appropriate to the age" Their chairs and tables should be appropriate for their size. It should be small not big ones so that what I said that I'm not satisfied because they are using big chairs and it determines their handwriting.

Teacher No 3: When preschool children used big chairs they cannot manipulate toys easily. They had to stand whilst writing or playing with clay. So, eh the furniture is inappropriate especially in public preschools.

Teacher No 4: Ok, Eh-mm, let me start by classroom arrangement eh, if my classroom has enough desks and chairs or tables that are suitable for kids that can be able to write at ease. I think this can have a positive impact on the learning and teaching environment.

In Table 4.8, only 8.5% of the respondents agree whilst 3% strongly agree that preschool children need appropriate size furniture; this may suggest that a small percentage of the participants are experienced teachers who have expert knowledge of teaching preschoolers. They know that inappropriate furniture impact on the learning of preschool children as they may end up with bad handwriting and suffer from skeletal diseases and stress, therefore, the appropriate size of the furniture is crucial for learning and growth.

The effect of different corners on learning of four-year old preschool children

Table 4.9: indicate the effect of different corners on learning of four-year old preschool children.

Table 4.9. The effect of different corners on learning of four-year old preschool children

Item	Frequency	Percentage
Strongly agree	9	4.5
Agree	10	5
Not sure	10	5
Disagree	98	49
Strongly disagree	73	36.5
Total	200	100

The effect of different corners on learning of four-year old preschool children is one of the questions that was raised. As indicated in Table 4.9, it is notable that 49% of the respondents *disagree* whilst 36.5% *strongly disagree* that the availability of different corners in the classroom affect the learning of four-year old preschool children. There is a correlation between the results of the questionnaire and the interviews, however, this may suggest that teachers want to use time sparingly as it consumes time to create different learning corners. Teachers may want to teach children in a quiet environment as noisy classrooms disturb both teachers and learners and they may be prevented by insufficient space from creating different corners. This agrees with the literature which conveys that the creation of a learning areas needs more space, consumes time and disturbs the smooth running of teaching as there would be excessive noise in the different corners (Metin, 2017).

During the interview, some of the teachers in the rural areas echoed that they cannot make different corners in their classrooms because of insufficient space due to overcrowded classrooms and lack of resources. The following remarks from the participant interview reflect these sentiments:

Teacher No 1: *And there is no time for creating different areas in the classroom. We cannot; we cannot be able to put them into different areas because of space.*

Teacher No 3: *Few schools create learning areas but most preschools in the Sibasa Circuit created few learning areas because of lack space.*

Teacher No 5: *There are so many corners which I do not have in this class like. We do not have play corner because of lack of space, resources and overcrowded classroom.*

Even though most respondents indicated that they *disagree* that different corners have an effect on the learning of preschool children, a few *agreed* that different corners have an impact on the learning of preschoolers. It is, thus, evident that preschool is the period where children are curious to explore new things and solve problems, therefore, different corners imply learning as children cannot demonstrate their potential without using different corners; some skills are acquired by using different corners. Bassok, Gibbs and Latham (2019) emphasize that phonic teaching in literacy corner lays the foundation for any disabled reader, especially, from preschool until the child enter primary school (Bassok, Gibbs & Latham, 2019).

4.4.5 Availability of wall chart

Table 4.10 presents the availability of wall charts which promote learning in the classroom environment of four-year old preschool children.

Table 4.10 Availability of wall chart promote learning in the classroom environment of four-year old preschool children

Item	Frequency	Percentage
Strongly agree	95	47.5
Agree	94	47
Not sure	10	5.0
Disagree	1	0.5
Total	200	100

The main finding is that the availability of wall charts promotes learning in the classroom environment of four-year old preschool children. The results indicated that (47.5%) of the respondents *strongly agree* that wall charts promote learning in the classroom learning environment, while (47%) *agree*. Teachers consider wall charts as teaching aids that add value to children's learning. In this regard, the results from the questionnaire and interviews are similar that, wall charts promote learning in the classroom environment. This may suggest that the availability of a wall chart plays a significant role in the preschool classroom as it makes the classroom more inviting, stimulating and interesting. Studies found that children learn to read or count incidentally by associating the print word with the pictures on the wall poster or charts (Shabiralyani, Hasan, Hamad & Iqba, 2015). Salinas-Gonzalez, Arreguin-Anderson and Alanís (2015) concur that wall chart re-enforces independent reading and makes the classroom more structured.

From the response of the questionnaires and participants' interview, it indicates that labelled objects improve language acquisition and children learn to read by associating the word with pictures. One of the participants confirmed this during the interview.

Teacher No 4: *I have displayed different types of wall charts such as weather charts, Alphabet chart. In those charts, I have labelled different objects in the home language. Therefore, a labelled object in the mother tongue improves the*

language acquisition of preschool children. They associate the word with the picture and read.

Table 4.10 shows that only 0.5% of the respondents did *not agree* that wall charts have an impact on the learning of four-year old preschool children. This implies that some of the teachers lack knowledge on how to make preschool classroom attractive. They lack an understanding that preschool classrooms should be furnished with talking walls as preschool children like bright colours and different types of wall charts. An empty classroom without wall charts may increase boredom amongst preschool children and some may end up dropping out of school.

4.4.6 The impact of noise levels on the learning of four-year old preschool children

There is a relationship between noise levels and learning of four-year-old preschool children. Table 4.11 indicates the impact of noise level on learning of four-year old preschool children

Table 4.11: The impact of noise level on learning of four-year old preschool children

Item	Frequency	Percentage
Strongly agree	65	32.5
Agree	91	45.5
Not sure	15	7.5
Disagree	23	11.5
Strongly disagree	6	3
Total	200	100

The main finding is that the noise level has an impact on the learning of four-year old preschool children. The results from Table 4.11 show that 32.5% of respondents revealed that they *strongly agree* that the noise level in the classroom has an impact on the learning of four- year preschool children, while the majority (45.5%) *agree* that

noise level affects learning. This suggests that noise disturbs the whole class as the teacher cannot teach effectively if there is excessive noise in the classroom. This is in line with literature which asserts that noise makes teachers tired easily, as it interrupts the whole class (Hannah, 2013). In addition, Gilavand and Jamshidnezhad (2016) found that noise affects the voice production of teachers as they are forced to speak loudly; noise causes the children to develop behavioural problems and consumes the time meant for teaching and learning.

In this regard, the participants' interviews also showed that excessive noise affects discipline in the classroom. Learners are unable to finish their tasks on time and teaching time is also consumed by trying to calm the classroom down. This sentiment is supported by the following extract:

Teacher No 6: Noise can be too much in the classroom. If noise is too much it is difficult to discipline learners. It is also difficult for learners to complete their work on time. Teachers cannot start their lessons in time. Noise frustrates teachers. They use inappropriate language when they are reprimanding learners that they are making noise.

However, 23% of the respondents showed that they *disagree* that noise affects the learning of preschool children. This is contradictory to the fact that noise distracts the attention of learners because, in different corners, children interact with their peers through communicating whilst doing hands-on activities. The noise implies learning because children communicate their ideas using language.

4.4.7 Classroom Ventilation

There is a relationship between a well-ventilated room and learning.

Table 4.12 presents the respondents' responses to the aspect that a well-ventilated classroom promotes learning.

As indicated, the main finding shows that a well-ventilated classroom promotes learning. The results from Table 4.12 indicate that (55%) of respondents *agree* that a

well-ventilated classroom promotes learning whilst (32.5%) *strongly agree*. This suggests that fresh air is crucial in human life; we need fresh air to survive, therefore, it is very essential to have a well-ventilated classroom for effective teaching and learning in every school.

Table 4.12 Well-ventilated classroom promotes learning

Item	Frequency	Percentage
Strongly agree	65	32.5
Agree	110	55
Not sure	16	8
Disagree	9	4.5
Total	200	100

As shown in the literature, well-ventilated classrooms reduce absenteeism, improve the performance of preschool children and promote the health status of four-year old preschoolers (Fisk, 2017). In accord, Ahmad, Noh, Adna, Puteh and Ibrahim (2013) recommend that teachers should ensure that the classroom environment has enough numbers of windows which allow the inflow and outflow of air, therefore, windows should be wide enough to allow maximum air exchange. Despite the high percentage of those who agree, (4.5%) of the respondents indicated that they *disagree* that a well-ventilated classroom promotes learning. This suggests that those teachers lack experience of teaching in rural areas where there are no facilities. In addition, they have no experience of teaching in extremely hot areas where classes are overcrowded and there is no air-conditioner.

It is a fact that a well-ventilated classroom promotes learning of four-year old preschool children. This is also in line with the participants' interviews which indicated that a well-ventilated classroom improves the attention span of children as it is difficult for preschool children to fall asleep in a well-ventilated classroom. This is evidenced by the following statement:

Teacher No 2: *Eh, the classroom environment can affect the learning of the four-year-old learner because firstly I would say the classroom environment should be conducive for learners. The classroom should have enough ventilation so that children can able to pay attention to it. If there is enough fresh air entering daily children do not fall asleep early in the morning.*

4.5 RESEARCH QUESTION 2: TO WHAT EXTENT DOES THE CLASSROOM ENVIRONMENT AFFECT THE LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN?

There were two major statements which participants had to respond to under this section.

4.5.1 The classroom provides chances for children to share ideas through group-work activities.

This statement relates to the classroom environment concerning learners sharing ideas through group work. Table 4.13 presents the reactions of respondents to this statement that the classroom offers chances for children to share ideas through group-work activities. The results show that (53.5%) of respondents indicated that they *agree*, whilst (39%) indicated that they *strongly agree*.

Table 4.13 Classroom provides chances for children to share ideas through group-work activities

Item	Frequency	Percentage
Strongly agree	78	39
Agree	107	53.5
Not sure	14	7
Strongly disagree	1	0.5
Total	200	100

This implies that the classroom environment affects the learning of four-year old preschool children to a large extent because children learn to socialize in their groups. This concurs with literature in Tombak (2013) and Wood (2014) which shows that in group-work activities, preschool children learn through play. Whilst playing, children build a connection with others, they learn to communicate ideas, negotiate, conquer fear, resolve conflict, as well as, develop leadership and group skills (United Nation Children's Fund, 2018). Curtis and Carter (2014) echoed that child-friendly space in preschool classrooms promotes group discussion and allows mutually respectful conversation and the exchange of ideas. The participants interviewed indicated that the classroom environment affects learning to a large extent because the children learn to interact with their peers. The authors add that learners acquire new experiences through the sharing of ideas. The views of the participants are followed by the statements cited below:

Teacher No 2: Eh, four-year classroom is very important as the learner, number one is learning to socialize meaning the learner will be learning to interact with other learners.

Teacher No 4: They also acquire new experience through sharing ideas. There is a time when there eh learner engage in story telling or when we ask them to tell us what their grannies tell them at home, so this can be a better way of learning.

A few respondents, 7%, in Table 4.13, indicated that they *disagree* that the classroom provides chances for children to share ideas through group-work activities. This may suggest that some teachers do not consider the aspects of speaking and listening in their classroom. This could have a negative impact on the learning of preschool children as they may fear to express themselves in the future.

4.5.2 The role of learning centres in providing learning materials that promote fine-motor skills

This statement is related to the role of learning centres in providing learning materials that promote fine-motor skills. Table 4.14 presents the respondents' views regarding the role of learning centres in providing learning materials that promote fine-motor skills.

Table 4.14: The role of learning materials in promoting fine-motor skills

Item	Frequency	Percentage
Strongly agree	93	46.5
Agree	86	43
Not sure	12	6
Disagree	8	4
Strongly disagree	1	0.5
Total	200	100

It is noted that learning materials play a significant role in promoting fine-motor skills for four-year old preschool children. The results revealed that 46.5% of respondents *strongly agree* that learning materials play an important part in developing fine-motor skills of the preschool children, whilst 43% *agree*. This suggests that enough materials in the classroom make learning more effective. This is in line with the literature that maintains that for children to develop fine-motor skills, a teacher must increase puzzles with big and smaller pieces that children can handle or manipulate, as these skills enable the four-year-old to put puzzles together (Wardle, 2008). Fine-motor skills are needed, so that children can manage, themselves, activities such as buttoning up a shirt, cutting and pasting. Fine-motor skills are essential as they enable learners to coordinate small muscles in the hands, arms and fingers (Wardle, 2008). Revemann (2008) believes that children learn best by interacting with concrete objects. Participants interviewed suggested that learning materials increase children's

vocabulary and fine-motor skills can be developed. The participants elaborated on this during the interview:

Teacher No 4: ...so learners learn by doing practical things. Maybe they can use puzzles to count and that is the other field that can assist learners to learn mathematics at ease. If you have enough puzzles, they can count Eh looking at those puzzles, looking at the shapes, they can mention the different type of shapes while they are using those puzzles.

Teacher No 6: Eh in the block corner, I can say it focuses mainly on the development of a child's fine motor skills. Eh as the child will be interacting with those blocks, building them and learning. The child will be learning high and low.

It is, thus, evident that learning materials are important for the development of fine-motor skills. Fine-motor skills are developed when learners are involved in activities such as, cut and paste, making clay figures and drawing pictures. If fine-motor skills are fully developed, it should give children chances of helping themselves, being independent. Playing different games using learning materials, such as dressing the doll and making mud cakes are also helpful in the development of fine-motor skills, therefore, this implies that the more the children use fingers, the more their hand coordination is developed. The utilization of small muscles in the finger is a life-long activity for the rest of children's lives (Wardle, 2008).

4.6 RESEARCH QUESTION 3: WHAT ARE THE CONDITIONS IN THE CLASSROOM LEARNING ENVIRONMENTS FOR THE FOUR-YEAR OLD PRESCHOOL CHILDREN AT SCHOOLS IN SIBASA CIRCUIT?

This section focuses on the condition of the classroom environment in schools and the learning of four-year old preschool children in the Sibasa Circuit. The statements of the respondents refer to - the effect of the availability of learning materials for four-year old preschool children; effect of the availability of funds on the learning of four-year old preschool children; effect of the availability of qualified teachers on learning

of four-year old preschool children; effect of the availability of classrooms and in-service training for teachers on the learning of four-year old preschool children.

4.6.1 Effect of availability of learning material for four-year old preschool children

This section is about the response of respondents on the effect of the availability of learning material for four-year old preschool children. The responses to this statement are displayed in Table 4.15.

Table 4.15: Effect of availability of learning material for four-year old preschool children

Item	Frequency	Percentage
Large extent	109	54.5
Not at all	64	32
Lesser extent	27	14
Total	200	100

The effect of the availability of learning material on four-year old preschool children is one of the findings. As indicated in Table 4.15, the majority of respondents (54.5%) indicated that lack of learning materials affects the learning of four-year old preschool children to a *large extent*. This may suggest that, such a lack hinders the development of preschool children and the teachers are compelled to do rote learning. This is in line with literature that says that teachers become stressed by trying to explain concepts to children to understand (Zinsser, Bailey, Curby, Denham & Basset, 2013). Twum (2016) found that the effectiveness of learning of four-year old preschool children is hindered by inadequate learning materials like picture cards, number cards, drawing cards, sand tray, picture books in the literacy centre, slates and alphabet chart.

Contradictory to the results of the majority, (14%) of the respondents indicated that a lack of learning materials affects learning to a *less extent*. This may be true if teachers can improvise according to a normal teacher-learner ratio. Boeren (2019) makes the

idea that adults and children play an important role in the micro-system. Children learn through manipulating different materials and the teacher arranges or brings suitable material so that learning may be possible, but if the learning environment is overcrowded, learning materials may not be enough; teaching and learning may be affected severely.

The participants' interviews revealed that the conditions of most preschool classrooms in rural areas are not conducive to learning. Public preschool teachers around Sibasa Circuit encounter many challenges whilst teaching. One of the challenges that affect teaching and learning is the lack of learning materials; this is affirmed by the following statements:

Teacher No 2: Eh there at Sibasa Circuit we still have Eh lack of resources. We don't have enough chairs for them to seat on. We do not have enough resources for them to use and their classroom environment inside is not appropriate for the age because sometimes there are not, Eh, resources like block corner. We do not have enough books for reading. They don't have enough picture books to look at when they are doing incidental reading. And the other thing they not have appropriate crayons and appropriate books to write on. They don't use lined books, the use those plain books that they write on.

Although 32% of the respondents showed that the availability of learning material does not affect learning at all, this implies that some teachers lack knowledge of how preschool children learn. Preschool children learn through all the senses, hence children should be able to associate a sound with a symbol on different wall charts. Lack of learning materials mean children could not develop fine and gross- motor skills as they learn through manipulating concrete objects, such as moulding clay, making puzzles and cutting with scissors.

4.6.2 Effect of availability of funds on learning of four-year old preschool children

Table 4.16 indicates the response regarding the effect of availability of funds on learning of four-year old preschool children.

Table 4.16: Effect of availability of funds on learning of four-year old preschool children

Item	Frequency	Percentage
Large extent	99	49.5
Not at all	62	31
Lesser extent	39	19.5
Total	200	100

The major finding in the extent to which inadequate funds affect learning of the four-year old preschool children is displayed in Table 4.16. The results indicate that (49.5%) of the respondents believe that inadequate funds affect teaching and learning to a *large extent* in the preschool classroom environment. This suggests that the majority of respondents consider inadequate funds as a challenge that affects both teachers and learners in most preschools. Wangila (2017) found that lack of funds is a big challenge that hinders the effectiveness of preschool learning.

Lack of funds may hamper the effectiveness of teaching and learning as money is needed for buying learning materials and for the professional development of teachers. The literature review indicates that preschool teachers have no access to professional learning opportunities because of financial constraints due to lack of bursaries (Pring, 2011). They are poorly supported financially by the Department of Basic Education (William, 2013). In addition, teachers have limited time for professional development. This is also in line with the participants' interviews which revealed that lack of funds affects the smooth running of preschool as they cannot buy essential things. This is supported by the following extract:

Teacher No 4: *Eh many materials we have to acquire by ourselves even though the department assist us, but we get few, few moneys. Remember we must make payments for, for teachers. Eh, we must make sure that learners get enough food, so we must buy also learning equipment. So, eh money eh is the problem and many more.*

Both the respondents who *agreed* and those who *disagreed* were (50%), which shows an average percentage, however, recent evidence suggests that no grant has been received by ECD in the education sector. Those who *disagreed* receive funds through the standard and norms allocation, especially, schools that fall under quintiles 3 and 4. Those who *agreed* do not experience any shortage of funds for buying learning materials, unlike the other (50%) of respondents who indicated that inadequate funds affect the learning of four-year old preschool children. This may suggest that these are the schools that have preschools that fall under quintiles 1 and 2 and they are not allowed to charge any mandatory fee. This impacts the learning of preschool children as it affects the quality of education in public preschools. The money that they receive is inadequate for the smooth running of school. Morgan (2019) shows that preschool children in America tend to attend low-quality preschool.

4.6.3 Effect of availability of qualified teachers on learning of four-year old preschool children.

There is a relationship between the availability of qualified teachers and level of learning of four-year old preschool children. Table 4.17 indicates the effect of availability of qualified teachers on learning of four-year old preschool children.

Table 4.17 Effect of availability of qualified teachers on learning of four-year old preschool children

Item	Frequency	Percentage
Large extent	104	52
Not at all	64	32
Lesser extent	32	16
Total	200	100

Qualified teachers being available promotes learning. Table 4.17 presents the results showing that more than half (52%) of the respondents concur that lack of qualified teachers affects the learning of four-year old preschool children to a *large extent* whilst (16%) articulate that lack of qualified teachers affects learning to a *lesser extent*. Globally, there is an outcry of shortage of qualified teachers (Haslip & Gullo, 2018). South Africa has a high rate of shortage of qualified teachers because, although, it has declared the right to quality of education for all children the country cannot provide schools with qualified teachers (Holmqvist, 2019). Lack of qualified teachers is a challenge, mostly, in the rural preschools.

This suggests that children may be taught by teachers who do not have the content knowledge and relevant teaching method for four-year old preschool children. In addition, they could fall into the trap of using inappropriate techniques while assessing children; this is in line with the literature. Sun, Rao and Pearson (2015) found that early childhood teachers have been perceived as child-minders who do not have or need professional training. That is the reason they are poorly remunerated and undervalued. This is in line with the participants' responses from the interviews that there are few qualified teachers for teaching the preschool children, therefore, the foundation phase teacher has to compromise and teach four-year old preschool children. The following remarks from the participants' interviews reflect these sentiments:

Teacher No1: *There eh no qualified teacher for teaching preschool children. Some of the teachers had to compromise to teach them especially those who are teaching foundation phase. Eh, it is the duty of the government to train more teachers for teaching preschool children.*

Teacher No 3: *High-qualified teachers for teaching preschool children are very limited. They are taught by foundation phase teaches who were not trained to teach preschool children.*

Teacher No 4: *When it comes to teachers Eh, many of school does not have qualified teachers that are trained for preschools, many schools, many classes eh are conducted by teachers who were trained for JPTD.*

Since (32%) of the respondents do not believe that lack of qualified teachers affect the learning of young children, this could impact the learning of four-year old preschool children. This implies that preschool children are catered by unqualified teachers who do not have content knowledge (Gumo, 2013).

4.6.4 Effect of availability of classrooms on learning of four-year old preschool children.

There is a relationship between the availability of classrooms and the quality of learning of four-year-old school children. Table 4.18 presents the effect of the availability of classrooms on learning of four-year old preschool children.

Table 4.18 Effect of availability of classrooms on learning of four-year old preschool children.

Item	Frequency	Percentage
Large extent	84	42
Not at all	80	40
Lesser extent	36	18
Total	200	100

One of the questions was on the extent to which inadequate classroom affect the learning of four- year preschool children. Results indicate that 42%of the respondents show that inadequate classrooms affect learning of four-year old preschool children to a *large extent*. This suggests that lack of classroom make learning ineffective; in some schools' preschool children are taught under trees (Chiparange & Saruchera, 2016). Some are taught in the dilapidated classroom putting their lives in danger; they need a good and safe learning environment (Republic of Kenya, 2008). This is in line with the literature which shows that in countries such as Mozambique, preschool classrooms are constructed from wood, straw wall and thatched roof. In rainy seasons there is no schooling because rainwater enters through the straw walls (Martinez, Naudeau & Pereira, 2017). It is thus evident that schools that utilise dilapidated classroom infrastructure, children learn under difficult situations, then, they tend to lose interest in school activities (Kotzé, 2015).

On the other hand, results indicate that 18% agree to a *lesser extent* that inadequate classroom affects the learning of four-year old preschool children. This implies that a small percentage of teachers do not have any experience of teaching in a dilapidated classroom where one of the most common features in the classrooms are snakes (Kotzé, 2015). This makes preschoolers hate school because of the multitudes of frightening creatures they may encounter. Preschool children, although still very young, need a safe environment that is conducive to learning. Three participants during the interviews indicated that the preschool classrooms in the Sibasa Circuit is

not conducive for learning. They are overcrowded and this affects learning to a *large extent*. This is confirmed by some of the participants during the interview:

Teacher No 1: *From my own experience I have visited some of the preschools in Sibasa Circuit. Some are not conducive for learning, they are overcrowded. No flexible space, no interaction amongst children. But at Sibasa classroom learning environment is not good.*

Teacher No 4: *Eh, even though I haven't gone to all eh, preschool at Sibasa but to those preschools that I have managed to visit what I have learnt or what I have seen is that some of the classroom are not conducive for learning because overcrowding, no space for kids to play.*

However, 40% of the respondents reported that the availability of classrooms does not affect the learning of children at all. This may imply that these teachers are working in rural preschools where the birth rate is low as youngest families are migrating from rural areas to urban areas looking for job opportunities. The classroom learning environment, hence, is not a problem. The only current implication for these teachers is the merging of schools due to the low enrolment rate. As a result, preschool children have to travel long distances accompanied by their parents; when they arrive, they fall asleep early because they are tired. Mghasse and William (2016) found that in Tanzania, preschool children walk long distances, thus, they get tired early in the morning. This makes parents afraid to register their children in public preschools; these affect both teaching and learning.

4.6.5 Effect of in-service training for teachers on learning of four-year old preschool children

Table 4.19 shows participants' responses on the effect of in-service training for teachers, on learning of four-year old preschool children

Table 4.19 Effect of in-service training for teachers on learning of four-year old preschool children

Item	Frequency	Percentage
Large extent	93	46.5
Not at all	58	29.
Lesser extent	49	24.5
Total	200	100

The majority of respondents (46.5%) indicated that lack of in-service training for teachers affects the learning of four-year preschool children to a large extent. This suggests that a lack of in-service training negatively affect the competency of teachers. This is supported by the findings from Hervie and Winful (2018) who mentioned that the poor performance of teachers in the classroom is due to a lack of in-service training. Similarly, in the literature review, Ravhuhali, Mashau, Kutame and Mutshaeni (2018) recorded that teachers have limited time for professional development, therefore, these teachers do not bother about the quality of teaching and learning (Ravhuhali *et al.*, 2018). A teacher, during the interview indicated that the lack of monitoring by the officials from the Department of Social Development and Department of Basic Education hinders the effectiveness of the classroom learning environment. The following remarks from the interviews support this:

Teacher No 1: *Unqualified teachers. Lack of refresher courses, lack of monitoring by government officials hinders the effectiveness of classroom learning environment.*

Teacher No 4: *Ok. Eh I think one of the facts is lack of training, lack training. Eh most of the time we, we are expected to work with these kids without proper training so this I can say it hinders Eh, effective teaching and learning.*

Of the respondents (29%) indicated that in-service training of teachers does not affect the learning of young children, however, it seems these teachers do not want to keep

pace with the changing curriculum and they do not consider themselves as life-long learners. The world is moving towards the Fourth Industrial Revolution where every individual needs to be computer literate. This implies that in-service training of teachers plays a crucial role; without training, teachers may not be able to assist preschool children to play games on the computer. Through in-service training teachers acquire new skills, knowledge and methodology, however, lack in these areas impedes the professional growth of teachers and the learning of young children (Osamwonyi, 2016).

4.7 RESEARCH QUESTION 4: WHICH STRATEGIES CAN BE EMPLOYED TO PROMOTE LEARNING OF THE FOUR-YEAR OLD PRESCHOOL CHILDREN?

This section covers response to the following statements: availability of qualified teachers promotes learning; availability of classrooms promote learning of four-year preschool children; classroom arrangement; and daily routine for everyday learning activities.

4.7.1 Availability of qualified teachers promote learning

The statement is about the relationship between qualified teachers and the promotion of learning. Table 4.20 indicates responses of teachers regarding whether the availability of qualified teachers promotes learning.

Table 4.20 Availability of qualified teachers promotes learning

Item	Frequency	Percentage
Large extent	99	49.5
Not at all	68	34
Lesser extent	33	16.5
Total	200	100

Table 4.20 presents results showing that 49.5% of respondents agree that the availability of qualified teachers promotes learning of preschool children to a *large extent*. This may suggest that to improve teaching and learning of preschool children, qualified teachers with specialized knowledge are needed. This is in line with literature that states high-quality teaching is determined by several factors which include teaching experience, qualifications as well as extensive special knowledge (Wechsler, Melnick, Maier & Bishop, 2016). Brinkman, Hasan, Jung, Kinnel, Nakajima and Pradha (2016) also highlight that a highly-educated teacher in early childhood development is associated with high-quality care in the preschool classroom learning environment. In this regard, the Curriculum Development Council (2017) adds that the learning environment involves interaction across the teacher, learners, curriculum and assessment. The teacher must create a conducive environment for learning, so interesting learning areas should be set up to encourage self-directed learning (Curriculum Development Council, 2017).

Only 18% of the respondents had different views regarding the availability of qualified teachers and its impact on learning. These results suggest that some teachers are poorly remunerated (Chikutuma, 2013). This causes them to leave the teaching profession in large numbers looking for greener pastures, thereby, creating a gap in teaching which is not easy to fill. Only knowledgeable teachers can improve teaching (Wechsler *et al.*, 2016). The remarks from the participants' interviews reflected this point:

Teacher No 1: *They need teachers who are trained. The teachers need to be creative to make this learning of preschool children more effective. They also need to be creative in such a way that they make their resources by using eh card boxes. In the olden days, we use eh washing powder card boxes and then Kellogg's card boxes to make resources with.*

Teacher No 6: *Em, obviously the preparation on teacher side. The teacher needs to be well prepared before their lesson when the teacher enters the class he or she must know what they are going to teach. They should be a continuous*

assessment on the daily basis to ensure that every child in the classroom is learning something.

Since high-qualified teachers play a significant role in the development of preschool children, it is evident that teachers should undergo intensive training in a higher education institution such as colleges and universities for a better understanding of the preschool curriculum so that teachers can achieve their goal of developing themselves in totality. They should prepare their lessons thoroughly and their past experiences should not be ignored as they influence the delivery of the curriculum. In this regard, teachers should use different learning materials to make teaching and learning effective, however, their situations force them to improvise with the learning aids. Well-trained teachers know the necessary assessment techniques including continuous assessment. Teachers should assess learners continuously whilst they are playing, eating, and writing and when they are manipulating toys to make learning more meaningful.

4.7.2 Effect of availability of classrooms on learning of four-year old preschool children.

One of the findings was that, availability of classrooms promotes learning of four-year old preschool. The results in Table 4.21 show that 46% of respondents indicated that availability of classrooms promotes the learning of four-year-old to a *large extent*.

Table 4.21 shows the participants' response to the availability of classrooms on learning of four-year old preschool children. These results suggest that the classroom learning environment is important as it is where the children start to form a relationship with the teacher and other children. This is in line with Bronfenbrenner's theory (2005) that states that the microsystem includes home, classroom, and child-care or after-school programs. The theory suggests that the way teachers in the classroom environment interact with children may have an impact on how the child learns; the more encouraging and nurturing these relationships and places are, the better the child will be able to grow and learn.

Table 4.21: The availability of classrooms promotes learning of four-year old preschool children

Item	Frequency	Percentage
Large extent	92	46
Not at all	71	35.5
Lesser extent	37	18.5
Total	200	100

Lundy, Orr and Shier (2017) emphasize that the availability of classrooms is important because this is where children have the right to be heard and to voice their views through playing, as mentioned in the Convention on Right of Child 1989 (Article 13). In addition, Roy, Frank, DeCamp, Miller and Roy (2015) also indicate that the classroom environment provides preschool children with effective instruction and promotes a smooth teaching-learning process that affects the educational sphere positively. Fraser (2012) posits that a classroom is a place where the operational activities of the day and quality of learning are broadened by the interaction between the teacher and learners.

Some participants, 35.5%, opposed the point that availability of classroom do promote learning of four-year old preschool children. This implies that they think that, for example, even under the tree, teaching and learning can take place. The availability of the classroom plays an important role as children, for example, would be learning to respect other people's belongings, to obey classroom rules and socialize peacefully with their peers. Studies by Rands and Gansemer-Topf (2017) show that the classroom is a community of learners wherein children learn to socialize with peers and teachers.

Of the respondents, 19%, think that the availability of classroom promotes learning of four-year old preschool to a minimal stage. This implies that they believe that whether a classroom is available or not, teaching and learning can take place. These teachers seem to forget that the classroom learning environment improves future learning. The

classroom environment furnished with appropriate materials is a good foundation for being competent in future life. Creativity emerges whilst working with different materials and cultural diversity would enable children to acquire different languages (Anim, 2012). In this regard, learners who attend Model C classrooms are more fluent in English than their counterparts, hence, most of them can debate fluently. Minimal availability of classrooms could hinder the competency of children, politically, socially and economically, therefore, some participants during the interview confirmed that the classroom environment is critical as it is where a solid foundation is laid.

Teacher No 1: In my classroom environment for four-year old preschool children is where as a teacher I can lay a solid foundation because their brains are still flexible. Is a place where I can lay a good foundation so that they can develop holistically? It is very important to have a classroom learning environment for preschool children are where they can interact with others in their respective groups. Again, is where they can develop their fine and gross, gross motor skills? When they are busy writing with crayons their fine motor skills are developed. When they are busy running inside the classroom the gross motor skills are also developed.

Teacher No 2: Eh, four-year classroom is very important as the learner, number one is learning to socialize meaning the learner will be learning to interact with other learners. Two, the learners will be able to control his or her emotions because he will be learning to be in the other environment where in is absent from the parents he won't cry for the parents know that this the time that I won't be with the parents I will be at school so it is very important for the learner to go to preschool.

Teacher No 3: Is a place where four-year-old children feel safe, feel free to explore new things. My kids are at liberty to move from one area to another to learn new things in my classroom.

Teacher No 4: I think, this classroom is important because as a teacher I am supposed to lay a solid foundation so that these kids can able to develop

physically, socially, emotionally and intellectually. So, this classroom is very important.

Teacher No 5: There is a saying which says, "Catch them young". If a child doesn't go to preschool, normally that child is hindered for his / her rest of her life. That four year is when life begins. That class is important because it bridges the factors between home and school. So, it is a stage where children must always pass through.

Teacher No 6: Eh, that's important because eh it is important to develop a child at a young age and it helps the child as they progress in their older years of learning in all aspects of their life whether it can be cognitively, socially and intellectually. EH, we can take a four-year class as eh a brand-new computer when they enter into the classroom. This computer needs to be programmed and installed a lot of eh features so that it works properly, so if you take a four-year-old childlike that then we are on the right track.

It is thus evident that the availability of classrooms plays an important role in the development of young children. The classroom environment should be a place where children feel safe as young children also need personal security. They need safety against dangerous things and need emotional security. They should be comforted when required by an experienced teacher as they are in a transition stage from home to school. The availability of the classroom plays an important role as it is where children feel that they belong to a certain group. Learners also start to feel free to interact with peers, teachers and different objects. Through interaction with other learners in the classroom, they start to explore new things that shape their personality. In this regard, teachers lay a solid foundation to help children develop in their future life as they learn. This is in line with literature; Dalton (2017) found that early learning is an investment that nourishes children's future.

4.7.3 Effect of classroom arrangement on learner performance

Table 4.22 presents the responses of teachers regarding the effect of classroom arrangements on learner performance.

Table 4.22 Effect of classroom arrangements on learner performance

Item	Frequency	Percentage
Large extent	148	74
Not at all	35	17.5
Lesser extent	17	8.5
Total	200	100

The majority (74%) of respondents think that classroom arrangement improves the learning of four-year old preschool children. This implies that a well-arranged classroom attracts learners to explore and to develop auditory perceptual skills. These results are in line with literature which confirms that a well-designed classroom can help children to learn effectively and promote the use of senses, auditory-visual and kinaesthetic so that children can develop holistically (Zane, 2015). In addition, Ndani (2015) indicates that class lighting, indoor air quality and class size promote children's health and educational outcomes; good lighting also increases the pre-schoolers' concentration span. In addition, Chepkwony, Kafwa and Kisilu (2018) contend that a well-arranged and attractive classroom environment stimulates preschool children to explore and investigate different aspects, in different learning corners. On this topic, Montessori's (1912) theory of constructivism stresses that the classroom environment needs to liberate the spirit, promote independence, allow activity, and be beautiful, safe, and orderly arranged.

On the same note, Chepkwony *et al.* (2018) state that the Kenyan Government has put preschool at the apex of its priorities by ensuring that every preschool classroom should be well arranged with appropriate furniture, learning resources, talking wall and good teacher-learner ratio.

Participants' interview results also show that classrooms should be well arranged with good ventilation, lighting and different corners. This is supported by the following remarks:

Teacher No 2: Eh, the classroom environment can affect the learning of the four-year-old learner because firstly I would say the classroom environment should be conducive for learners. The classroom should have enough ventilation. Furniture in the classroom should appropriate to the age and in the classroom, they should be a reading corner, resting corner a fantasy corner where children can be able to run around.

Teacher No 3: They need different types of activities in the classroom to improve classroom of preschool children. I also need classroom that is well ventilated with air conditioner because during summer children fall asleep early in the morning, early in the morning because of heat

Teacher No 6: Eh the classroom feature eh influence learning in the classroom in the sense that children have hands on physical involvement in the classroom. In the fantasy corner a teacher can put eh object such as a doctor's uniform, a toy gun to symbolize a police man, eh a pot to symbolize a chef and if kids get to play with those things they will be playing i.e. when I grow up I want to be a doctor, I want to be chef so in those corners. A child is able to eh gain a lot of things, so these features are very important in the classroom.

Since a well-designed classroom plays an important role in the development of young children, this implies that preschool classrooms should invite learners to explore new things. Inviting classrooms provoke children to think critically and in a preschool classroom this can be enhancing through playing with blocks. Features such as birthday charts, flexible space, daily schedules and different corners support the healthy development of children in the classroom. A well-designed classroom should touch the personal lives of children by engaging them in fantasy play and by seeing pictures of their families pasted on the wall (Worthington, 2008).

Only 18% of the respondents indicate that they disagree that classroom arrangement would affect the learning of young children. This implies that some teachers may not be able to arrange a classroom as it consumes time for teaching as they need enough time to complete the preschool curriculum. Some of the corners in the classroom are noisy, but teachers need a disciplined classroom where children are task-orientated. Satterlee, Molavi and Williams (2015) found that noise affects the cognitive performance of children and their reading comprehension whilst reading.

4.7.4 Effect of a daily routine for everyday learning activities, on learner performance

Table 4.23 indicates the response of teachers on the effect of a daily routine for everyday learning activities, on learner performance.

Effect of a daily routine for everyday learning activities is a major issue in promoting learning among children at school in rural areas. Results indicate that 96% of respondents agree that the daily routine for everyday learning activities, improves learning. This may suggest that teachers can work effectively if a daily routine is strictly followed as this will also benefit learners.

Table 4.23: Effect of a daily routine for everyday learning activities, on learner performance

Item	Frequency	Percentage
Strongly agree	85	42.5
Agree	105	52.5
Not sure	10	5.0
Total	200	100

A daily routine would enable teachers to cover the preschool curriculum; discipline can be maintained at ease and teachers may know when to assess learners. This is in line with literature which stipulates that a daily routine enhances learning as it promotes good interaction between the teacher, learners and the curriculum that is being delivered (Curriculum Development Council, 2017).

During the interview, participants also highlighted that a daily routine governs their daily activities and provides the opportunity for the Integration of different subjects. This statement is affirmed by the following quotations:

Teacher No 1: Daily schedule is also there, that govern us on what we are going to do next until we finish our daily program.

Teacher No 3: I also feel good about my daily schedule. Eh, daily schedule reminds me to take children to the toilet. During this period healthy life is reinforced to children. I taught them to wash their hands when they come back from the toilet while eating and when they want to write. In this situation an integration of different subjects such as life skills and literacy also take place.

Only 5% of respondents indicated that they are not sure that a daily classroom routine can promote learning. It is, thus, evident that failure to follow the classroom schedule may result in failure to complete the curriculum coverage for preschool children. This implies that disciplinary problems may emerge because children will not be focused.

4.8 SUMMARY

This chapter focused on the presentation and discussion of the results which were discussed in line with the research objectives. A literature review was used to support the findings and both results from questionnaires and interviews were discussed. The chapter that follows represents the summary of the results, conclusion and recommendations.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS, AND CONCLUSION

5. SUMMARY, RECOMMENDATIONS AND CONCLUSIONS OF THE STUDY

5.1 INTRODUCTION

In Chapter 4, the findings of this study were presented, analyzed and discussed in detail. The findings were discussed in line with the research objectives and questions raised for the study. This chapter focuses on providing a summary of the findings, recommendations and conclusion.

This study aimed to explore the effect of classroom environment on the learning of four-year old preschool children at Sibasa Circuit in the Vhembe District. The aim was achieved through the guidance of the following research questions:

- How does the classroom learning environment affect the learning of four-year old preschool children?
- To what extent does the classroom environment affect the learning of four-year old preschool children?
- What are the conditions in the classroom learning environment for four-year old preschool children in the Sibasa circuit?
- Which strategies can be employed to promote learning of four-year old preschool children?

5.2 SUMMARY OF THE MAIN FINDINGS

Different themes and sub-themes were deduced on the effect of classroom environment on the learning of four-year old preschool children. The discussion of the summary of the main findings are as follows:

5.2.1 Demographic findings of the study

5.2.1.1 Gender

The results reveal that females are in the majority as compared to males. These may have a negative impact on the learning of children as teaching seems to be dominated by female teachers. These results may suggest that males are reluctant to teach preschool children for reasons not explored by this study.

5.2.1.2 Age

The results indicate that the majority of teachers who completed questionnaires are middle-aged, and some are about to retire. This may suggest that middle-aged teachers are more passionate to teach pre-schoolers, like elderly people, who make good caregivers to young children.

5.2.1.3 Academic qualification

The results reveal that the majority of respondents hold the lowest academic qualifications - Educare level 5; this suggest that such teachers will not be very competent when compared to their counterparts in other preschools who hold qualifications, like, Diploma in Early Childhood Development, Degree in Early Childhood Development, Senior Primary Teachers Diploma as well as Junior Primary Teachers Diploma.

5.2.1.4 Teaching experience

Teaching experience has a positive impact on the learning of preschool children. The results show that the majority of teachers with long service, especially, ten years and above are more knowledgeable and helpful to these children. It is evident, therefore, that the availability of such experienced teachers may produce better results.

5.2.2 Research question 1: How does the classroom learning environment affect the learning of four-year old preschool children?

5.2.2.1 Classroom design and promotion of learning and development of four-year old preschool children

The findings established that a well-designed classroom environment promotes the development of four-year old preschool children, holistically. It also makes learning pleasurable and it improves the health status of these children. This is supported by Ahmad and Amuril (2017) who show that a well-arranged learning environment makes learning enjoyable, improves the health status and children's learning abilities. If a classroom is not well arranged, lacks materials and good facilities, it tends to distract the ability of preschool children to stay on given tasks. It is, thus, evident that in the well-designed classroom children become more focused and there is an atmosphere of mutual trust between the teacher and the children. Poorly-arranged classroom influences children to scatter, resulting in behavioural problems.

5.2.2.2 The arrangement of furniture for preschool children

One thing that has an effect on the learning environment is the arrangement of furniture which should allow flexible movement; the findings revealed that indeed well-arranged furniture influences how children play and learn. Moreover, when furniture is being moving from one place to another, it activates the brain and the senses of preschool children (Duncan, Magnuson & Murnane, 2016; Basye *et al.*, 2012). It is, thus, clear that a piece of well-arranged furniture promotes flexibility as the children are able to develop their fine as well as gross-motor skills through playing different games. Creative art is possible if the classroom is flexible as the children can draw and paint at ease. Different learning groups can then be formed and a flexible space allows children to rest. Resting time and space are essential for preschool children as they cannot afford to be taught for the whole day.

5.2.2.3 Sizes of furniture for four-year old preschool children

The fact that an appropriate size of furniture in the preschool classroom affects learning was demonstrated in the findings. The findings stipulate that appropriate sizes of furniture for preschool children promote good handwriting and good sitting posture. Findings also reflect that chairs and desks should be appropriate for four-year-old so that children can manipulate toys easily.

5.2.2.4 The effect of different corners on learning of four-year old preschool children

Different corners, as part of the findings, were indicated as another component that affects the learning of four-year old preschool children. The study reveals that learning corners allow children to work in small groups, share ideas, socialize with peers and learn different skills. A literacy corner, for example, with a well-defined library supports children's ability to read; a block corner arouses the thinking abilities of preschool children, while art areas enable children to voice their views through drawing. This implies that different corners re-enforce discipline as they allow children to work in small groups. It also allows every child to participate in the class, as well as, be at liberty to interact with diverse groups of children.

5.2.2.5 Availability of wall chart

The availability of wall charts was cited as one of the factors that promote learning in the classroom. Findings show that children learn to read or count incidentally by associating the print word with the picture in the wall posters or charts. Further findings revealed that wall chart reinforces independent reading and makes the classroom more structured.

It is, thus, obvious that the availability of a wall chart stimulates children's interest to read. Furthermore, discipline can be reinforced through displaying routine schedules, weather charts and class-rules charts. The wall charts promote children's interest when a new theme is being displayed. It captures their attention and they become more curious to explore.

5.2.2.6 The impact of noise level on learning of four-year old preschool children

Excessive noise affects learning abilities in a classroom; the results confirmed that excessive noise affects teaching and learning negatively, especially, if children are not preoccupied with different activities in the classroom. The South African Schools Act of 84 of 1996 8 (1) and (2) (SASA) were put in place to promote good school discipline so that learners should learn in an orderly manner in a safe environment, as, seemingly, noise impacts learning negatively. In a noisy classroom, it is very difficult to maintain order, therefore, teachers are reluctant to teach in such a classroom. On the other hand, if teachers are not well-prepared children are forced to make noise as children are active by nature; they want something to pre-occupy them.

5.2.2.7 Well-ventilated classroom promotes learning

A well-ventilated classroom promotes learning of four-year old preschool children. The findings indicate that well-ventilated classrooms reduce absenteeism, improve the performance of preschool children and promote the health status of four-year old preschoolers. Further findings show that the classroom environment should be furnished with enough windows which would allow ventilation. There is evidence that preschool children are vulnerable to extreme temperatures especially those that are found around Vhembe District. Extreme heat in the classroom reduces children's attention span and increases errors in performing tasks, hence, it affects the health and well-being of the children.

5.2.3 Research question 2: To what extent does the classroom environment affect the learning of four-year old preschool children?

5.2.3.1 The classroom provides chances for children to share ideas through group-work activities

There are many ways of sharing ideas in the classroom environment; findings suggest that sharing ideas through group work activities enables children to understand each other because there is social interaction amongst them. Moreover, it enables them to

deal with the challenges that they encounter in their respective groups; sharing of ideas through group-work activities develops leadership skills.

Evidence also shows that sharing of ideas improves communication amongst preschool children. It enables children to plan and follow such plans to complete the prescribed activity.

5.2.3.2 The role of learning centres in providing learning materials that promote fine-motor skills

The fact that the learning centres provide a wide variety of material that promote fine-motor skills is one of the beneficial factors cited in the findings. The findings suggested that for children to develop fine-motor skills, teachers must provide puzzles with big and smaller pieces that children can handle or manipulate as the fine-motor skills enable the four-year-old to put the puzzles together; flexible fingers enable children to manipulate smaller building materials, like Legos. Evidence shows that four-year children hold crayons instead of grasping it so, it is very important to provide them with big wax crayons and plain books instead of lined ones.

5.2.4 Research question 3: What are the conditions in the classroom learning environments for the four-year old preschool children at schools in Sibasa Circuit?

5.2.4.1 Effect of availability of learning material of four-year old preschool children

The condition of the preschool classroom in public schools is not conducive to learning. One of the reasons cited was a lack of learning materials. Lack of resources hinders the development of preschool children as, sometimes teachers are compelled to do rote learning. Teachers become stressed when trying to explain concepts to children until they understand. Further findings demonstrated that the effectiveness of learning for four- years of preschool children is hindered by things like, inadequate picture cards, number cards, drawing cards, sand tray, and picture books in the literacy centre, slates and alphabet charts.

5.2.4.2 Effect of availability of funds on learning of four-year old preschool children

Concerning funds, inadequate funding hampers the effectiveness of teaching and learning.

Findings revealed that availability of funds affects the quality of education in preschool. Preschools get funding from parents and Non-Governmental Organization (NGO) as the government lacks commitment and clear policies on how to fund preschool. Inadequate funds affect the quality of education in preschools.

Further findings demonstrated that even the Department of Social Development and United Nations Children's Funds (UNICEF) noted that absence of learning materials and resources, inadequate funds, lack of qualified teachers, inadequate security for children make classroom learning environment ineffective. It is evident that inequality still exists when it comes to disbursement of funds to schools. Most government preschools depend on primary school allocation. It is very difficult to get all the necessary resources for preschool children from this allocation, making it necessary for parents to pay extra money for the smooth running of preschools.

5.2.4.3 Effect of availability of qualified teachers on learning of four-year old preschool children

The fact that a lack of qualified teachers affects learning is revealed in the findings; findings reflected that a high rate of shortage of qualified teachers exists because all children have the right to quality education. To provide quality education there should be more workforce of teachers. Findings indicate that preschoolers are attending preschools without qualified teachers. Unfortunately, early childhood teachers have been perceived as child-minders who need not have professional training.

5.2.4.4 Effect of availability of classrooms on learning of four-year old preschool children

The fact that inadequate classrooms affect learning is demonstrated in the findings; for example, lack of classroom leads to overcrowding where there is no effective learning. In these conditions, teachers cannot use various teaching methods; they depend on the instructional method. Additionally, the findings demonstrated that overcrowded classroom wastes time because teachers spend a lot of time solving behavioural problems.

5.2.4.5 Effect of in-service training for teachers on learning of four-year old preschool children

The findings show that in-service training plays a significant role in retraining teachers to cope with any new curriculum. It also provides them with new skills and knowledge. On the other hand, the findings revealed that lack of in-service training make teachers perform poorly in the classroom situation. Teachers undergo professional development program for self-enrichment; they want to live a better life by earning high salaries, as they are not bothered about the quality of teaching and learning.

5.2.5 Research question number 4: Which strategies can be employed to promote learning of the four-year old preschool children?

5.2.5.1 Availability of qualified teachers promote learning

High qualified teachers who have been trained to develop preschool children are highly regarded because they lay a solid foundation. Findings indicated that 99(50%) of respondents believe that the availability of qualified teachers is one of the strategies that can improve the classroom environment of four-year old preschool children. The results confirm that the effectiveness of the physical classroom learning environment of preschool children, rests upon a strong teaching force and the availability of resources. One of the findings shows that highly-educated teachers in early childhood development are associated with high-quality care in the preschool learning environment.

5.2.5.2 Availability of classrooms promote learning of four-year old preschool children

The classroom environment is important as it is where a solid foundation for learners is laid. The findings show that the majority of respondents indicated that the classroom environment provides preschool children with effective instructions and promotes a smooth teaching-learning process that affects the educational sphere positively. Further findings evidenced that the availability of classrooms is important because it is where children have the right to be heard and to voice their views through play and interaction between teachers and learners.

5.2.5.3 Classroom arrangement

Results show that a well-designed classroom can help children to learn effectively and promote the use of the senses - auditory-visual and kinaesthetic - so that children can develop holistically. For example, wall charts with labels, keep the classroom environment structured and organized reinforcing independence in preschoolers. Findings show that classroom lighting, indoor air quality and class size promote children's health and educational outcomes. In this regard, one of the findings revealed that a well-arranged and attractive classroom environment stimulates preschool children to explore and investigate different aspects, in different learning corners.

5.2.5.4 Daily routine for everyday learning activities

The findings reflected that daily routine enhances learning as it promotes good interaction between teachers, learners and the curriculum that is being delivered. A daily routine develops integration amongst different subjects and enhances self-discipline amongst the preschool children because there is an allocation of time for every activity in the schedule.

5.2.6 Conclusion

The study established that there are many challenges that hinder the effectiveness of learning in the four-year old preschool classroom environment. These include -

inadequate funds, lack of qualified teachers, inadequate classrooms, lack of learning materials and lack of in-service training for teachers. The findings of the study also revealed that there are factors that can be considered to promote the learning of four-year preschool children like - well-designed classrooms, availability of learning material, availability of classrooms, and availability of qualified preschool teachers promote the learning and development of preschool children. The study recommended that it is the responsibility of the Department of Education to provide preschools with adequate infrastructure for teaching and learning to be accessible. Furthermore, the Department should offer young children appropriate teaching and learning materials and qualified teachers who are properly remunerated.

5.3 SUGGESTIONS

5.3.1 Department of Education and the Department of Social Development

The Department of Education and the Department of Social Development should take initiatives in improving the classroom environment for four-year old preschool children by:

- 5.3.1.1 Improving preschool classroom environment through building new infrastructures that are appropriate for four years old.
- 5.3.1.2 Hiring more qualified preschool teachers permanently and remunerate them accordingly.
- 5.3.1.3 Providing preschool with quality, adequate learning materials.
- 5.3.1.4 Conducting Professional Development for preschool teachers.
- 5.3.1.5 Furnishing preschools with adequate standard and norms allocation funds.

5.4 CONTRIBUTION TO THE BODY OF KNOWLEDGE: MODEL FOR FOUR-YEAR OLD CHILDREN

The study on the effect of classroom environment on the learning of four-year old preschool children developed a "Rural Preschool Classroom Model" for preschool children which was guided by the research findings. The recommendations of the study were based on this Model.

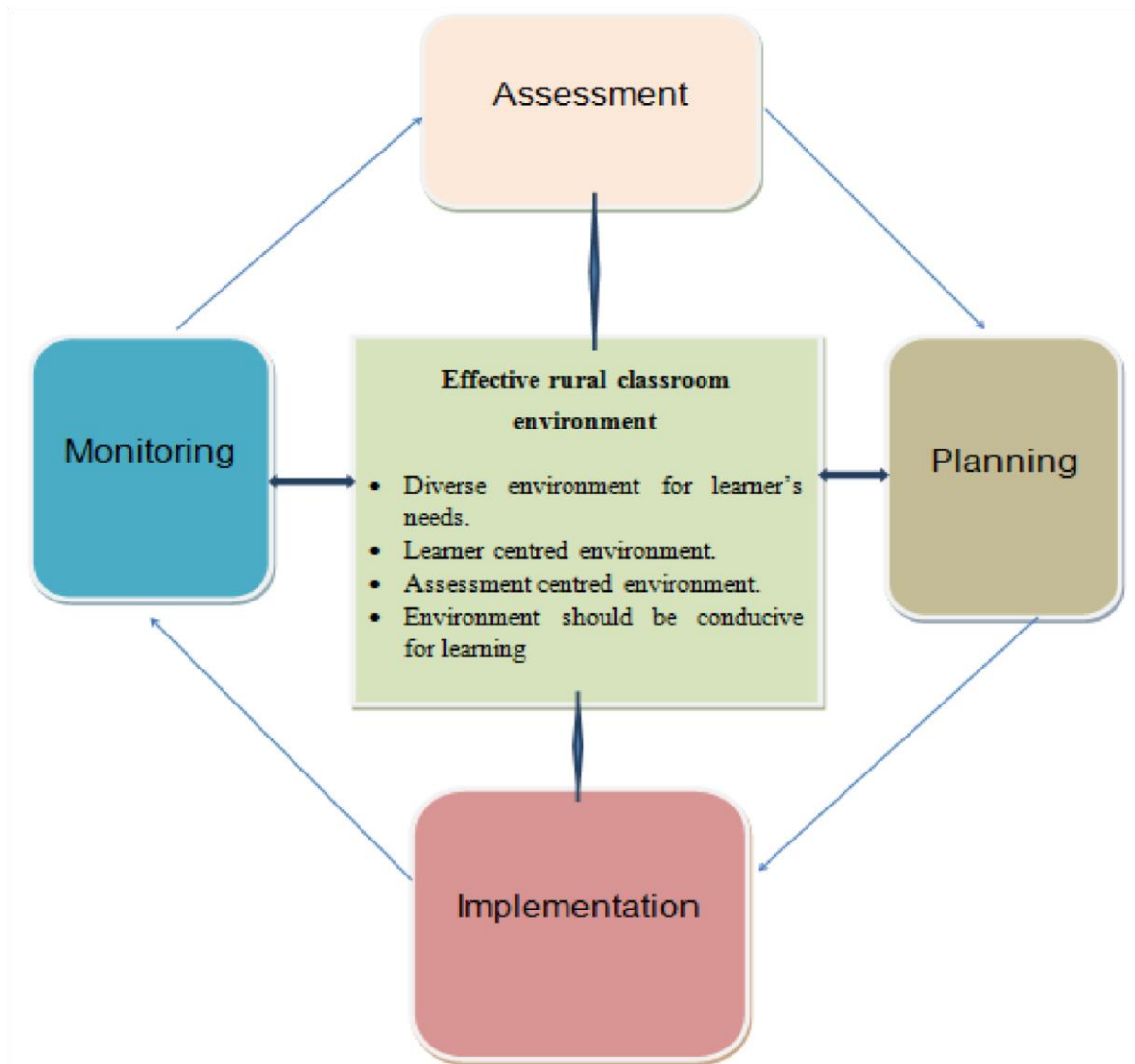


Figure: 5.1. Rural Preschool Classroom Model for four- year children.

There are four criteria in this Model that can promote learning for four-year old preschool children in a rural context. Their components include the following:

- A conducive rural learning environment
- Diverse environment for rural learners' needs
- Learner-centred environment
- Assessment-centred environment

The functionality of these criteria rests upon the following:

- Planning
- Implementation
- Monitoring
- Evaluation

Based on the findings, the Model recommends that to promote learning in a rural preschool, a conducive classroom is one of the priorities that should be considered.

5.4.1 Conducive learning environment

A well-designed learning environment plays a significant role in the development of young children. For learning to be effective, the classroom should be well-arranged. Different stakeholders such as teachers, parents and the community should work together to make learning more effective. This concurs with Bronfenbrenner's Ecological Theory (2005) which looks at the child's development within the context of relationships. The child should be able to interact with both teachers, parents and the community at large. A well-designed classroom should cater to different learning areas as claimed by Kara (2018) that, learning areas in the classroom are crucial for skills development that may help preschool children in daily life. Effective learning rests upon the contribution of all stakeholders either through donations, modelling and hands-on activities. In the manipulative area, teachers should encourage children to come with real objects that are accessible, such as clay.

The duty of the teacher in collaboration with other stakeholders is to layout different learning areas for the benefit of preschool children. They should furnish different learning areas with appropriate community-based materials for the development of these children. This is in line with the literature which posits that children learn best when interacting with concrete objects (Revemann, 2008); for example, potters who are experts from the community should come and train these children on how to make real clay pots, hence, The Clay Project for Rural Preschool children should be introduced and teachers will assign time for completion. The Clay Pot Project may be a better way of fundraising. In a way, entrepreneurship will also be reinforced.

Teachers should monitor the conduciveness of the classroom when children are busy doing hands-on activities. They should consider the safety and well-being of children. Children learn when they are at ease and feel secured and comfortable. To promote conduciveness in the classroom, class size should be considered. Few children would allow teachers plenty of time to provide individual attention. Preschool children need considerable monitoring as they learn whilst playing. All stakeholders should monitor too, the working rate of both children and their teachers. Teachers should motivate them to complete their projects on time. The handling of clay needs to be monitored as the children may spoil it. The aim of manipulating clay is to develop fine-motor skills for the children. Development of fine-motor skills for rural preschool children is vital because, when they grow up they are the ones to be responsible for the household chores.

The teachers and parents should evaluate the well-being of the rural classroom environment regularly; where refinement is needed they have to adjust.

5.4.2 Diverse environment for learners' needs

An effective rural learning environment can be promoted by addressing diversity and individual learner's needs. Findings also indicated that in group-work activities, preschool children from different cultures and backgrounds learn through play. Teachers should plan well on how to make groups more effective. All children in the class should be involved in the planning process; they should be allowed to voice their

views. This is in line with literature which stipulates that children in the classroom have the right to be heard and to articulate their views in different ways. While playing, children build a connection with others. They learn to communicate ideas, negotiate and resolve conflict. They also learn to respect other cultures both in the classroom and in the community. To address diversity, family and community members should be invited to tell stories and provide activities. This is an implementation stage (for example, share foods, clothing, and traditions with teachers and peers) that connect children to their values and ethnicities (United Nations Children's Funds (UNICEF), 2018; Strickland *et al.*, 2014). Teachers have to evaluate the effectiveness of sharing food in the classroom. They should learn to sell things that are found mostly in rural areas like Mopani worms and vegetables like blackjack.

5.4.3 Learner-centred environment

Classroom Model recommended that for the classroom to be more operative, the environment should be learner-centred. It should strive to develop the children holistically. In rural schools, morals should be developed by organizing Preschool Moral Campaign. The School Management Team, School Governing Body and parents should facilitate the campaign. Cultural dances should be introduced and the rural children should be allowed to participate at an early age. They will be assisted by experts in traditional dances who will come from their communities.

Vygotsky (1986) adds that in the zone of proximal development of preschoolers, they have to be assisted by knowledgeable people such as teachers in both easy tasks that they can do independently and difficult tasks to avoid frustrations. The aim thereof is to allow the children to expand their concrete knowledge and concrete ideas (Semmar & Thani, 2015). Vygotsky (1986) also mentions scaffolding as elements whereby the teachers and the children interact in the classroom environment acquiring new knowledge. New knowledge can be acquired by doing small projects, for example, rural preschool children can ask their elderly how to cook traditional porridge. Even if they cannot cook it, during fantasy play, they will act cooking food, such as porridge, through this, they will gain new knowledge and skills. In addition, the findings showed that the classroom provides chances for children to share ideas through

group-work activities. In such activities, young children gain knowledge and skills through playing, interacting with objects and people (United Nations Children's Fund, 2018).

5.4.4 Assessment-centred environment

Continuous evaluation is critical for learning of four-year old children to be effective. Assessment cannot be done in a vacuum, planning is needed. The teachers should form part of designing an evaluation plan. Teachers and Early Childhood Practitioners should design a checklist considering the geographical area of the school. The Department of Basic Education in collaboration with the Department of Social Development should monitor the well-being of children while the teachers monitor the effectiveness of children's work. Wechsler *et al.*, (2016) emphasize that the National Research Council has shown that well-planned assessment is essential to enhance instruction in early learning classroom. For preschool assessment to be effective, preschool programs need to be reviewed on a periodic basis. Monitoring and supervision are important for the quality implementation of preschool activities. Preschool teachers need guidance for the smooth running of the assessment. The study recommends that the preschool assessment program should be aligned with the curriculum.

In conclusion, all criteria have to be evaluated continuously against planning, implementation and monitoring for the effectiveness of rural classrooms for preschool children. Continuous assessment should be done by teachers in collaboration with Early Childhood Development practitioners, parents, principals, community developers and the School Development Body.

5.4.5 Curriculum Advisors

Curriculum advisors should take decisive steps in implementing school-based cluster meetings and school-based phase meetings, mainly for the development of teachers. Preschool teachers should know concepts that are appropriate for preschool children.

5.5 SUGGESTIONS FOR FURTHER STUDIES

5.5.1 The developed Model is not yet piloted. After piloting, it is then that other researchers will be allowed to use it, internationally, continentally, provincially and locally, aiming at improving the classroom environment for four-year old preschool children in rural schools.

5.5.2 Potential researchers should consider conducting a study on the effect of funds on the learning of rural preschool children.

5.5.3 Again the upcoming researchers should consider conducting a study on diverse classroom environment for learners' needs in rural preschools.

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ANNEXURE: 1

EFFECT OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR YEAR PRESCHOOL CHILDREN IN, VHEMBE DISTRICT QUESTIONNAIRE

The purpose of this questionnaire is to explore the effect of classroom environment on learning of four-year pre-school children.

SECTION A: BIOGRAPHICAL DATA

For each of the following items, indicate what applies to you by making a mark in the appropriate box:

1. Gender

Male	1
Female	2

2. Age

20-29 years old	1
30-39 years-old	2
40-49 years-old	3
50-59 years old	4
60 years and older	5

3. Highest academic qualification

Educare level 5	1
Diploma in Early Childhood Development	2
Degree in Early Childhood Development	3
Senior Primary Teachers Diploma	4
Junior Primary Teachers Diploma	5

4. Teaching Experience

0-10 years	1
11-20 years	2
21-30 years	3
31-40 years	4
41 and more	5

SECTION B: State the extent to which you agree or disagree with each of the following statements by putting mark in the box that applies to you:

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1. Safe and well-designed classroom environment promotes learning and development of four year preschool children	1	2	3	4	5
2. My preschool classroom is arranged in a manner that allows free movement of learners	1	2	3	4	5
3. The arrangement of furniture for preschool children allow flexible movement	1	2	3	4	5
4. The arrangement of furniture fits the appropriate age of four year preschool	1	2	3	4	5
5. The appropriate sizes of furniture for four year preschool children have an effect on learning	1	2	3	4	5
6. The classroom for four year preschool children is divided into different corners	1	2	3	4	5

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
7. Wall charts improve language acquisition of children	1	2	3	4	5
8. Wall charts are frequently used in the classroom	1	2	3	4	5
9. Learning centers need to be in a well-defined area with boundaries	1	2	3	4	5
10. Learning materials arranged in a way that they allow children to socialize in different learning areas	1	2	3	4	5
11. Noise affects learning abilities in the classroom	1	2	3	4	5
12. My classroom for preschool children is well ventilated	1	2	3	4	5
13. Establishment of daily routine is essential for everyday learning activities	1	2	3	4	5
14. Preschool classroom have a large group meeting area	1	2	3	4	5
15. Classroom provides chances for children to share ideas through group work activities.	1	2	3	4	5
18. Classroom allows children to develop writing skills by providing a variety of writing tools (e.g., pencils, crayons)	1	2	3	4	5

19. Classroom activities allow children to explore, experience and discover things	1	2	3	4	5
20. Classroom environment allows children to use technology	1	2	3	4	5
21. Classroom provides children with favorable reading materials	1	2	3	4	5
22. Classroom environment encourages social interaction amongst children	1	2	3	4	5
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
23. Classroom learning centers provide a wide variety of materials that promote fine-motor skills (e.g., puzzles, pegs and peg boards,	1	2	3	4	5
24. Display relevant print and writing examples at children's eye level in the classroom of four year preschool children	1	2	3	4	5
25. Communication encourages interaction and conversation amongst preschool children especially in times of dramatic and pretend play.	1	2	3	4	5

26. To what extent does each of the following affect learning of four year preschool children?

	Large extent	Not at all	Lesser extent
(i) Classroom arrangement	1	2	3
(ii) Lack of learning material	1	2	3
(iii) Inadequate funds	1	2	3
(iv) Lack of qualified teachers	1	2	3
(v) Availability of qualified teachers	1	2	3
(vi) Inadequate classrooms	1	2	3
(vii) Availability of classrooms	1	2	3
(viii) Poorly paid teachers	1	2	3
(ix) Behavioral problems	1	2	3
(x) Lack of in-service training for teachers	1	2	3
(xi) Working long hours	1	2	3

ANNEXURE: 2

INTERVIEW QUESTIONS FOR FOUR YEAR PRE-SCHOOL TEACHERS

1. Why four year preschool classroom environment is important?
2. How do you feel about your current classroom environment?
3. What are the features of well- designed classroom learning environment?
4. In what way does the classroom environment affect preschool children?
5. Which activities could be put in place to make classroom environment to be more effective?
6. During social interaction amongst learners, what observation can you make as a teacher?
7. What factors hindered the effectiveness of classroom learning environment of four year preschool children?
8. What support do preschool teachers need in order to improve classroom learning environment of preschool children?

ANNEXURE: 3

DATA COLLECTION STRATEGIES QUESTIONS

Question	Description	Participants	Codes	Themes
1. How do classroom learning environment affect learning of four year pre-school children?	<ul style="list-style-type: none"> • well -arranged classroom can promote the development of children • appropriate furnisher promote good hand writing • develop good posture 	Teacher: 1	P1	Classroom arrangement Appropriate furnisher
	<ul style="list-style-type: none"> • The classroom should have enough ventilation. • Furniture in the classroom should appropriate to the age. • there should be a reading corner, resting corner a fantasy corner 	Teacher: 2	P2	Ventilation Classroom arrangement Appropriate - age furnisher Corners

	<ul style="list-style-type: none"> • Safe and secure place to explore new things • Attractive classroom capture learner attention 	Teacher : 3	P3	Classroom arrangement Safety and security
	<ul style="list-style-type: none"> • free to explore new things and many more • I am a teacher, a mother who gave care for this children so, so that they can feel secured. 	Teacher: 4	P4	Classroom arrangement Security
	<ul style="list-style-type: none"> • Negatively if there is no enough resources • Positively if there is enough resources • Bright colours stimulate learning 	Teacher: 5	P5	Resources Classroom arrangement (colours)
	<ul style="list-style-type: none"> • Learners are focused and not distracted 	Teacher:6	P6	Well-arranged classroom

	<ul style="list-style-type: none"> • Setting of tables • Displayed wall charts 			<p>Arrangement of tables</p> <p>Wall chart</p>
2. To what extent does classroom environment affect learning of four year preschool children?	<p>Through play they learn to</p> <ul style="list-style-type: none"> • Interact • Share • Acquire new experiences • Take turns • It is where they can interact with others in their respective groups. 	Teacher: 1	P1	<p>Activities</p> <p>Group-work activities</p>
	<ul style="list-style-type: none"> • Resources correlate with their age • Appropriate chairs • Different corners • Number one is learning to socialize meaning the learner will be learning to 	Teacher: 2	P2	<p>Resource.</p> <p>Different corners</p> <p>Group-work activities</p>

	interact with other learners.			
	<ul style="list-style-type: none"> • Play enhance learning • Improves social interaction • Improves gross and fine motor skills • Integration of different subjects do occur 	Teacher: 3	P3	<p>Social Interaction</p> <p>Development of fine motor skills</p>
	<ul style="list-style-type: none"> • Share ideas through play • Joyous • Acquire new experiences 	Teacher: 4	P4	Activities
	<p>Play</p> <ul style="list-style-type: none"> • They develop fine and gross motor skills • Learn to explore new things 	Teacher: 5	P5	Development of gross and fine motor skills
	<ul style="list-style-type: none"> • It is often said that kids learn through play 	Teacher: 6	P6	

	<p>activities. So if a teacher can include play activities in the classroom this play activities need to develop a child cognitively, physical and social skills.</p>			<p>Development of children holistically.</p>
<p>3 Condition of classroom environment in schools that offer learning of four-year preschool children</p>	<ul style="list-style-type: none"> • Overcrowded • No qualified teachers • High temperature during summer • Lack of resources 	<p>Teacher: 1</p>	<p>P1</p>	<p>Overcrowded</p> <p>Unqualified teachers</p> <p>Temperature</p> <p>Lack of resources</p>
	<ul style="list-style-type: none"> • Eh lack of resources that they are the main point. • We don't have enough chairs for them to seat on. 	<p>Teacher:2</p>	<p>P2</p>	<p>Lack of resources</p>

	<ul style="list-style-type: none"> We do not have enough resources for them to use and their classroom environment inside is not appropriate for the age 			
	<ul style="list-style-type: none"> Lighting is very good. Walls are furnished with pictures, charts and language rich vocabulary. They are overcrowded. Extremely hot during summer Lack of qualified teachers 	Teacher: 3	P3	<p>Lighting</p> <p>Wall Poster</p> <p>Overcrowded</p> <p>Temperature</p> <p>Unqualified teachers</p>
	<ul style="list-style-type: none"> Lack of qualified teachers Wall pictures for language enrichment Overcrowding 	Teacher: 4	P4	

	<ul style="list-style-type: none"> • Sitting arrangement is difficult because there is no space 	Teacher:5	P5	No space
	<ul style="list-style-type: none"> • Eh their classroom are overcrowded. • Resources are limited • Noise can be too much in the classroom. • They use inappropriate language when they are reprimanding learner 	Teacher:6	P6	<p>Overcrowded</p> <p>Insufficient Resources</p> <p>Noise</p>
4 .What support needed to improve classroom of pre-school children?	<ul style="list-style-type: none"> • We need in-service training. • We need also resources • They need also teachers who are trained. • They need different types of activities. • eh planned classroom environment 	Teacher:1	P1	<p>Training</p> <p>Resources</p> <p>Activities</p> <p>Well-ventilated classroom environment</p>

	with well - ventilated with well- ventilated windows, with well noise, with well temperature.			
	<ul style="list-style-type: none"> • We can encourage parent to take, take their children to preschool that are nearby so that the child can arrive at school fresh. • They should talk to the drivers to bring the learners earlier not be late. • The teacher can devise when talking about resources 	Teacher:2	P2	Parents involvement Transport Transport Make their own resources
	<ul style="list-style-type: none"> • Teachers need in- service training. 	Teacher : 3	P3	In-service training Curriculum

	<ul style="list-style-type: none"> • They need different types of activities • They also need, I also need preschool curriculum that suite four year children only. • I also need classroom that is well ventilated. 			Well ventilated classroom
	<ul style="list-style-type: none"> • We need to have that workshop training so that we can improve many areas. • Eh we need to have proper curriculum. 	Teacher: 4	P4	
	<ul style="list-style-type: none"> • Continuous assessment is needed 	Teacher:5	P5	Assessment
	<ul style="list-style-type: none"> • Eh, I can we can use strategies such as play activities in the classroom. 	Teacher:6	P6	Activities

	<ul style="list-style-type: none"> • The teacher needs to be well prepared before their lesson. • They should be a continuous assessment on the daily basis. • Introducing the educational game 			<p>Preparations</p> <p>Assessment</p> <p>Games</p>
--	--	--	--	--

ANNEXURE: 4

P.O. Box 2145

Sibasa

0970

16 September 2019

Circuit Manager: Sibasa

Private Bag x 2166

Sibasa

0970

Dear Sir/Madam

Re: Request for permission to conduct research in school

I Makhwanya Ntshengedzeni Theresa, the Doctoral student at University of Zululand under the supervision of Prof Kutame AP& Prof Mbatha-Ngubane hereby request permission to conduct research at your school. The topic of my thesis is "The effect of classroom environment on learning of four year preschool children in Sibasa Circuit, Vhembe District"

The aim of the study is to explore the effect of classroom environment on learning of four year preschool children. The data collection instruments will be face to face interview, checklist and questionnaire. The time-frame for face to face interview is 30 minutes. The discussion will be audio-taped and transcribed verbatim.

Participation in the study will be voluntary, thereby allowing the participants the right to withdraw at any stage of the research. The results of the study will enlighten the

school managers and educators of the preschool about the effect of classroom environment on learning of four year preschool children.

The findings and recommendations will help the Department of Education to mitigate the gaps and improve classroom environment of four year preschool children.

Thanking you in anticipation

Yours truly

Signature: Makhwanya N.T. (Mrs)

For any information, contact me at the following number

Cell Number: 0636596001

Email address: ntmakhwanya@gmail.com

ANNEXURE: 5 Letter to request permission to involve some of the school's staff members in the study

P.O. Box 2145

Sibasa

0970

16 September 2019

The School Manager

Tshilambuvhe Primary School

Sibasa

0970

Dear Sir/Madam

Re: Requesting permission to involve some of the school's staff members in the study

I humbly request your permission for the participation of your pre-school educators in my research. The topic of my research is: The effect of classroom environment on learning of four year pre-school children in Sibasa Circuit, Vhembe District

I am currently pursuing my Doctoral degree in Early Childhood Development at University of Zululand.

The purpose of the study is to explore the effect of classroom environment on learning of four year preschool children. The data collection instruments will be face to face

interview, questionnaire and observation checklist. The time-frame for the face to face interview is 30 minutes. The discussion will be audio-taped and transcribed verbatim.

The participants' confidentiality and anonymity will be safeguarded by using pseudonyms; therefore no data will be linked to their names. Participation in the study will be voluntary, thereby allowing the participants the right to withdraw at any stage of the research. The results of the study will enlighten the school managers and educators of the preschool about the effect of classroom environment on learning of four year preschool children.

The findings and recommendations will help the Department of Education to mitigate the gaps and improve classroom environment of four year preschool children.

Thanking you in advance

Yours faithfully

Signature.....

N.T. Makhwanya (Mrs)

For any information, please contact me at the following number

Cell Number: 0636596001

ANNEXURE: 6



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF
EDUCATION**

Ref: 2022 Entg: Mabogo MG Tel No: 015 290 9365 E-mail: MabogoMG@edu.limpopo.gov.za

Makhwanya NT
P.O.BOX 2145
SIBASA
0970

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: **"EFFECT OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR YEAR PRE-SCHOOL CHILDREN IN SIBASA CIRCUIT, VHEMBE DISTRICT."**
3. The following conditions should be considered:
 - 3.1 The research should not have any financial implications for Limpopo Department of Education.
 - 3.2 Arrangements should be made with the Circuit Office and the schools concerned.
 - 3.3 The conduct of research should not in anyhow disrupt the academic programs at the schools.
 - 3.4 The research should not be conducted during the time of Examinations especially the fourth term.
 - 3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).
 - 3.6 Upon completion of research study, the researcher shall share the final product of the research with the Department.

REQUEST FOR PERMISSION TO CONDUCT RESEARCH: MAKHWANYA NT


CONFIDENTIAL

Corr. 113 Bliccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X9489, POLOKWANE, 0700
Tel: 015 290 7600, Fax: 015 297 6920/4220/4494

The heartland of southern Africa - development is about people!

- 4 Furthermore, you are expected to produce this letter at Schools/ Offices where you intend conducting your research as an evidence that you are permitted to conduct the research.
- 5 The department appreciates the contribution that you wish to make and wishes you success in your investigation.

Best wishes.



Ms NB Muthewana
Head of Department

12/11/17

Date

REQUEST FOR PERMISSION TO CONDUCT RESEARCH: MAKHWANYA NT

CONFIDENTIAL

ANNEXURE: 7



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

SIBASA CIRCUIT

Sibasa Circuit Office

P/Bag X2166

SIBASA, 0970

Tel.No. 015 963 2062

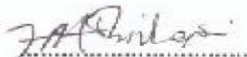
Fax. 015 963 2931

Enq: Maphodo S
Tel: 015 963 2062
Cell: 079 226 4698

TO: MAKHWANYA N.T

PERMISSION TO CONDUCT RESEARCH: YOURSELF

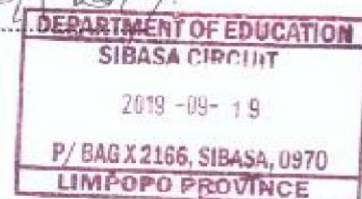
1. The above matter has reference.
2. I hereby wish to acknowledge receipt of your letter in which you are requesting to be permitted to conduct research on "*effect of classroom environment on the learning of four year pre-school children in Sibasa Circuit Vhembe District.*"
3. Our office hereby notifies you that your request is approved provided you do not interrupt teaching and learning activities.
4. Thanking you in advance.



CIRCUIT MANAGER

19/09/2019

DATE



ANNEXURE: 8 PARTICIPANT INFORMED CONSENT DECLARATION INFORMED CONSENT DECLARATION

(Participant)

Project Title: Effect of classroom environment on learning of four year pre-school children in Sibasa Circuit Vhembe District; (Makhwanya Ntshengedzeni Theresa) from the Department of Early Childhood Development, University of Zululand has requested my permission to participate in the above-mentioned research project

The nature and the purpose of the research project, and of this informed consent declaration have been explained to me in a language that I can understand.

I am aware that:

1. The purpose of the research project is to explore the effect of classroom environment on learning of four-year pre-school children in Sibasa Circuit' Vhembe District.
2. The University of Zululand has given ethical clearance to this research project and I have seen/ may request to see the clearance certificate
3. By participating in this research project I will be contributed towards addressing the condition of classroom learning environment in schools in the Sibasa circuit providing learning for four year preschool children. I will be participating in the project by completing a questionnaire and answering oral questions during interview
4. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequence
5. I will not be compensated for participating in research, but my out-of-pocket expenses will be reimbursed.
6. There may be risks associated with my participation in the project I am aware that

- a. The following are associated with my participation: (issues of confidentiality)
 - b. The following steps have been taken to prevent the risks: No name will be written on the questionnaire
 - c. There is 0% chance of the risk materializing.
7. The researcher intends publishing the research results in form of journal articles. However, confidentiality and anonymity of records will be maintained and that my name and identity will not be revealed to anyone who has not been involved in the conduct of research.
 8. I will receive feedback in a form of results regarding the results obtained during the study
 9. Any further questions that I might have concerning the research or my participation will be answered by Makhwanya Ntshengedzeni Theresa , cell 0832357089
 10. By signing this informed consent declaration, I am not waiving any legal claims, rights or remedies
 11. A copy of this formed consent declaration will be given to me, and the original will be kept on record

I,.....
have read the above information / confirm that the above information has been explained to me in a language that I understand and I am aware of this document's contents. I have asked all questions that wished to ask and these have been answered to my satisfaction. I fully understand what is expected off me during the research

I have not been pressurized in any way and I voluntarily agree to participate in the above mentioned project

.....

Participants signature

Date

ANNEXURE: 9

**UNIVERSITY OF ZULULAND
RESEARCH ETHICS COMMITTEE**
(Reg No: UZREC 171110-030)



RESEARCH & INNOVATION

Website: <http://www.uzulw.ac.za>
Private Bag X1001
KwaDlangezwa 3886
Tel: 035 902 6731
Fax: 035 902 6222
Email: DlelanaM@uzulw.ac.za

ETHICAL CLEARANCE CERTIFICATE

Certificate Number	UZREC 171110-030 PGD 2018/286					
Project Title	EFFECTS OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR-YEAR PRE-SCHOOL CHILDREN IN SIBASA CIRCUIT, VHEMBE DISTRICT					
Principal Researcher/ Investigator	Ntshengedzeni T. Makhwanya					
Supervisor and Co-supervisor	Prof A.P Kutame			Prof Ngubane Mbatha		
Department	Early Childhood Development					
Faculty	Education					
Type of Risk	Med Risk – Data collection from people					
Nature of Project	Honours/4 th Year	Master's	Doctoral	x	Departmental	

The University of Zululand's Research Ethics Committee (UZREC) hereby gives ethical approval in respect of the undertakings contained in the above-mentioned project. The Researcher may therefore commence with data collection as from the date of this Certificate, using the certificate number indicated above.

- Special conditions:**
- (1) This certificate is valid for 1 year from the date of issue.
 - (2) Principal researcher must provide an annual report to the UZREC in the prescribed format [due date – 26 August 2020]
 - (3) Principal researcher must submit a report at the end of project in respect of ethical compliance.
 - (4) The UZREC must be informed immediately of any material change in the conditions or undertakings mentioned in the documents that were presented to the meeting.

The UZREC wishes the researcher well in conducting research.

Gideon De Wet
Professor Gideon De Wet
 Chairperson: University Research Ethics Committee
 Deputy Vice-Chancellor: Research & Innovation

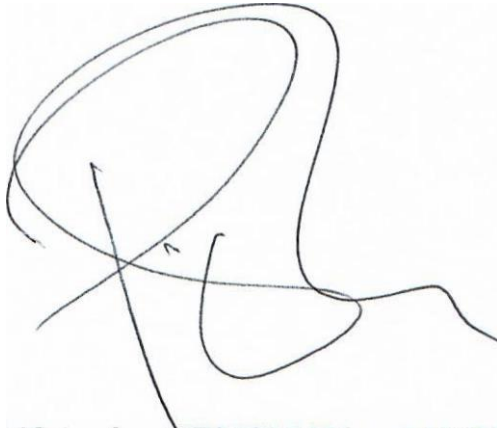
CHAIRPERSON
 UNIVERSITY OF ZULULAND RESEARCH
 ETHICS COMMITTEE (UZREC)
 REG NO: UZREC 171110-030
 27 AUG 2019
RESEARCH & INNOVATION OFFICE

27 August 2019

ANNEXURE 10

4 July, 2020

This is to indicate that I, Dr P Kaburise, of the English Department, University of Venda, have proofread the research report titled - **EFFECT OF CLASSROOM ENVIRONMENT ON LEARNING OF FOUR-YEAR OLD PRESCHOOL CHILDREN IN SIBASA CIRCUIT, VHEMBE DISTRICT** - by **Makhwanya Ntshengedzeni Theresa**. I have indicated some amendments which the student has undertaken to effect, before the final report is submitted.

A handwritten signature in black ink, appearing to be 'P. Kaburise', written on a light-colored background.

Dr P Kaburise (0794927451/ 0637348805; phyllis.kaburise@gmail.com)

Dr P Kaburise: BA (Hons) University of Ghana (Legon, Ghana); MEd University of East Anglia (Cambridge/East Anglia, United Kingdom); Cert. English Second Language Teaching, (Wellington, New Zealand); PhD University of Pretoria (South Africa)