KWARA STATE UNIVERSITY, MALETE, NIGERIA

SCHOOL OF POSTGRADUATE STUDIES (SPGS)

Influence of Structural and Process Qualities on Preschoolers' Numeracy Performance in Early Childhood Education Centres in Ilorin East.

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18/27/MEE007

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M.Ed. THESIS SUBMITTED AND PRESENTED

BY

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18/27/MEE007

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DEPARTMENT OF EARLY CHILDHOOD AND PRIMARY EDUCATION, FACULTY OF EDUCATION, KWARA STATE UNIVERSITY, MALETE NIGERIA

OCTORBER, 2021

DECLARATION

I hereby declare that this thesis titled "Influence of Structural and Process Qualities on Preschooler's Numeracy Performance in Early Childhood Education Centres in Ilorin East" is a record of my research. It has neither been presented nor accepted in any previous application for higher degree.

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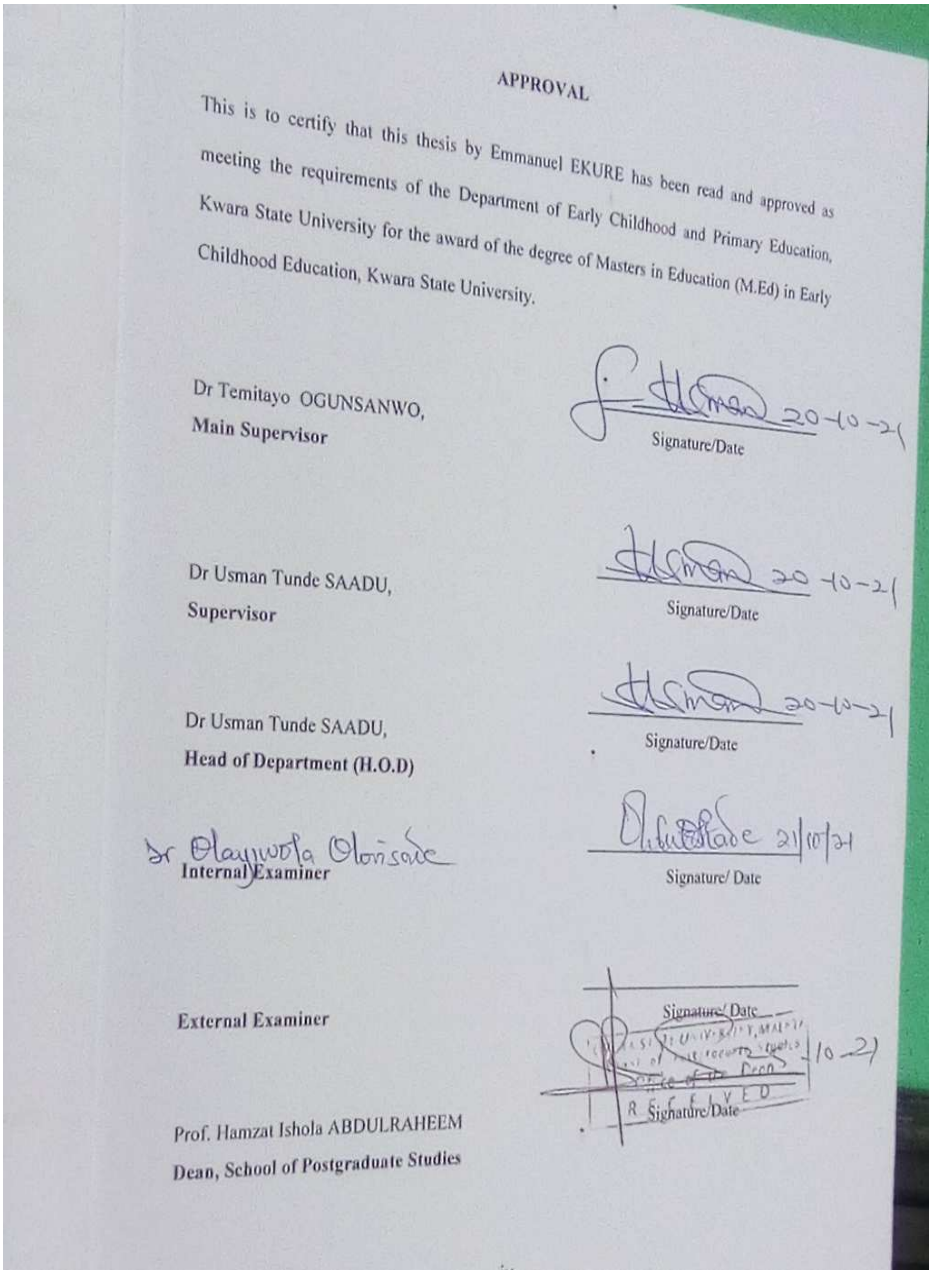
EMMANUEL EKURE **Signature /** Date

APPROVAL

This is to certify that this thesis by Emmanuel EKURE has been read and approved as meeting the requirements of the Department of Early Childhood and Primary Education, Kwara State University for the award of the degree of Masters in Education (M.Ed) in Early Childhood Education, Kwara State University.



DEDICATION

This Thesis is dedicated to God.

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TABLE OF CONTENTS

LIST OF TABLES

Tables **Page**

APPENDICES

Appendix **Page**

ABSTRACT

Numeracy is one of the areas of learning, however, poor academic performance of pupils in Numeracy has been established in literatures. Therefore, this study examined the influence of structural and process qualities on pre-schoolers' numeracy performance in early childhood education centres in Ilorin East.

The study adopted a descriptive survey research design, population: all Early Childhood Education Centres, Population; all preschools, all teachers and all preschoolers both in public and private schools. Simple random sampling technique was used to select 10% of all the existing schools in Ilorin East LGA. Simple random sampling was used to select one teacher each from the 15 ECE centres that amounted to 15 teachers and total enumeration was used to select one intact class each from the 15 ECE centres that amounted 290 pre-school children were involved in the study. Three self-designed instruments were used to collect data, these are Scale on Children Numeracy Performance (SCNP), Preschool Structural Quality Rating Scale (PSQRS) and Preschool Process Quality Rating Scale (PPQRS). These instruments were tested for reliability using test-retest method and it yielded 0.76, 0.71 and 0.72 respectively. Descriptive statistics of frequency counts, percentage, mean, standard deviation were used to analysed the demographic data and all the research questions while inferential statistics of multiple regression was used to test all hypotheses formulated at 0.05 level of significance.

The study revealed that the structural qualities in terms of playground, classroom and furniture is high. The process qualities in terms of curriculum and assessment is high: must schools are private schools and must children may be gifted or talented. While teacher qualification is low, must teachers employed have low qualification. The Numeracy performance of preschoolers in Ilorin East LGA is high. The result of hypotheses tested shows that there is no significant influence of structural qualities on preschoolers' numeracy performance ($f_{(3,11)}$=0.277; P>0.05). There is no significant influence of process qualities on preschooler's numeracy performance ($f_{(3,11)}$=2.25; P>0.05).

Based on the findings of this study, structural and process qualities have no significant influence on preschoolers' numeracy performance. Only qualified and professional teachers should be employed to teach in preschools, it was recommended that qualified and professional teachers should be employed to teach in preschools, government and private school operators should organise workshops, seminars and training programs to train teachers already employed but are not qualified. Preschool operators should sponsor Preschool teacher's professional course and Preschool operators should try and sustain or even improve on the standards.

CHAPTER ONE
INTRODUCTION

Background to the Study

The early years have been recognized as the most critical period for the holistic development of children and success in later life. According to the Canadian Council on Learning (2010), findings from research indicate that experiences during the first five years of a child's life have a major bearing on his or her future success in school, in the workplace, and many other aspects of a healthy, fulfilling life. This is why the early year is considered foundation for later life. In their submission, Oduolowu and Olowe (2011) noted that the early years of children are years of extreme vulnerability and tremendous potentials, during which adequate protection, care and stimulation are essential to provide the foundation for well-being and development.

This is why the period of the early years needs to be handled with all special and detailed attention because it is a period which may positively or negatively affect the future performance of the child because whatever children are exposed to during this period has wide range of impact on their learning, development and future achievements. This underscores the reason for considering the issue of access to good structural and process qualities in early childhood development, care and education for all children as one of the major outcome targets of Sustainable Development Goal (SDG) (United Nations, 2015; United Nations Educational, Scientific and Cultural Organization, UNESCO, 2016).

Early years are the period for the development of appropriate skills needed for overall development and future achievement. Part of the skills expected to be developed during this period is numeracy skill which is to be inculcated in the child at the Early Childhood level of education which includes but not limited to preschool (Sooter, 2013).

This level of education is considered the right stage for the inculcation of literacy and numeracy skills to prepare them for proper arithmetical skill in the primary level and mathematical learning at other levels of education. Hence, an objective of the one –year. Pre-primary education in Nigeria is to inculcate in children the spirit of enquiry and creativity as they explore nature, environment, art, music and make use of toys (FRN, 2013).

This is why this level of education should be provided with the appropriate structural and process qualities on order to unleash in children the needed skills, especially numeracy. Numeracy is necessary for everyday living, from daily activities like telling the time, cooking and setting the table; to more difficult tasks understanding mobile phone plans, planning a trip, reading a map and understanding timetables (Victoria, 2020). The skills acquired in numeracy will enable children to effectively communicate and transact in the society (Nnamdi, 2014).

Numeracy in early years, if appropriately connected to a child's world is more than getting ready for school or accelerating them into elementary arithmetic (Asiat, 2018). Understanding how children learn in the area of early numeracy is essential to meaningful teaching and learning of numeracy (Ahmed, 2017). In both developed and developing countries of the world, numeracy is regarded as the ability to understand and use numbers in addition to basic reading and writing skills. Numeracy skill offers greater benefits to children.

According to Mullis, Martin, Foy, and Arora, (2012) children who either engaged in early numeracy activities at home with their parents, or students who had a moderate to strong understanding of early numeracy concepts when entering kindergarten, had higher mathematics achievement in the fourth and eighth grade.

Research suggests that early numeracy skills are necessary for developing higher order mathematics and problem solving skills (Gersten & Chard, 1999,) further illustrating the importance of children developing a strong foundation in early numeracy. Children's early numeracy skills are defined as a "child's fluidity and flexibility with numbers, the sense of what numbers mean, and an ability to perform mental mathematics and to look at the world and make comparisons" (Gersten & Chard, 1999). Purpura and Lonigan (2013) conducted a study to determine the specific skills that children need to develop in early numeracy. They found that early numeracy is composed of three specific domains: numbering, relations, and arithmetic operations.

These domains require children to understand counting processes and sequences, critically think about numbers and quantity, understand the association between collections of objects

and numbers on a mental number line, know the meaning of numerals, and understanding how to compose and decompose specific quantities (Purpura & Lonigan, 2013). By helping young students develop a strong understanding of early numeracy skills, educators and parents have the potential to enable children to experience future success in their mathematical achievement. Specifically, early intervention and preventive measures should target early numeracy skills such as counting, quantity discrimination, and number, which has been found to be moderate to strong predictors of mathematics achievement (Lembke & Foegen, 2009).

Although effective early numeracy interventions have been identified, few empirical studies have focused on how parents can interact with their children to help them develop early numeracy skills. Pupils' performance in numeracy has been relatively poor (Aremu, 2003). Yusuf (2019) postulate that poor academic performance in numeracy was evident during the inter-school quiz competition in Ekiti Local Government Area of Kwara State. He observed that pupils found it difficult to answer some of the numeracy questions, with poor performances in the 2017 and 2018 common entrance examinations, where 40% of the pupils scored 50 marks and above while 60% scored below 50 marks (Yusuf, 2019).

It has been reported that 6 to 14% of school age children are estimated to have a specific learning difficulty in Numeracy (Barbaresi, Collingan, Katusic, Jacobsen & Weaver, 2005). Some of the roles of Mathematics according to Nurudeen (2007), included: its ability to enhance the thinking capabilities of individuals by making them to be more creative, reasonable, rational as well as imaginative. There is no school curriculum or a national development planning which does not take cognizance of the usefulness and development in school mathematics. Despite the importance of Numeracy, there are a number of observable problems associated with its teaching and learning, especially at the secondary school level.

These problems include poor method of instruction (Kalijah, 2002). This is supported by the assertion of Agommuoh and Nzewi (2003) that attributed the deterioration in students' achievement in Numeracy to ineffective method of teaching. It requires the ability to use algebra and geometry; this makes the learning of mathematics particularly difficult for many

students (Redish, 1994). Ogunleye (2001) prioritized the lack of adequate qualified and experienced Numeracy teachers and laboratory equipment, as two major recurring problems of teaching mathematics in secondary schools. Angell (2004) point out that students find mathematics difficult because they have to contend with different representations such as formulas and calculations, graphs and conceptual explanations at the same time. In developed countries, it has been observed that students success in mathematics is lower than chemistry and biology, that students do not like science course/subjects and that most have no preference for science, particularly physics (Mattern & Schau 2002, Rward & Straw 2000).

Structural quality is partly determined by legislation, policy and funding and are a major factor in the macroeconomic costs of ECEC. Process quality concerns the more proximal processes of children's everyday experiences and involves the social, emotional, physical, and instructional aspects of staff-child and peer interactions while being involved in play, activities or routines (Anders, 2015; Barros et al 2016). Structural features are considered to be important preconditions for process quality, which in turn is most strongly related to child development, well-being and learning (Vandell et al., 2010).

Structural qualities refer to the standard or state of infrastructure, amenities, facilities, training programs of staff as well as pre qualifications and equipment provided and how they are arranged, organized and being put to use. Structural quality is also seen to entail the distal and regulable factors such as child-staff ratio, group size and staff training/Education. Burchinal et al, 2010; Barros et al, 2016) This is in line with best practice stipulated in the minimum standard for setting up an early childhood education centre in Nigeria at ensuring it has adequate and good nutrition plan, Health care, Protection and safe environment for the children. School location and security should be safe and free from hazards that could be harmful to children.

The school should be sited in an area with favourable weather condition that will not endanger the lives of the children and staff. The school should be properly fenced with security guards, the proximity of the school to town or city should be such that, a walking distance for the child. The school should be located within the range of available security coverage. For the best

interest of children, both the indoor and outdoor structure within the early childhood education setting should be of high quality.

Cynthia and Megan (2008) confirmed a strong and positive relationship between quality of school facilities and students achievement in English and Mathematics. Bandele (2003) noted that the importance of physical facilities cannot be relegated. Facilities like modern laboratories, libraries and classrooms are to be put in place in all schools. Adesola (2005) found out that the level of available resources is indeed a plus to the teachers and goes to show the level of ingenuity and commitment of the teachers toward effective delivery of lesson. There is the need for renovation of old buildings, chairs, desks, cabinets and acquisition of modern classrooms as earlier recommended by Alimi (2007).

Akinfolarin (2008) identified facilities as a major factor contributing to academic performance in the school system. These include classroom furniture, recreational equipment, and playground among others. Different studies conducted by Ayodele (2000) and Vandiver (2011), showed that a positive relationship exists between availability of facilities and students academic performances. Research findings on the influence of facilities in private and public secondary schools on students' academic performance are controversial. Alimi (2004) found out that the type of school, classified as public or private did not make any difference on students' academic performance. However, Ajayi (2006), found out that school type makes a difference in students academic performance. In addition, Philias and Wanjobi (2011) reiterated that the type of schools, (single sex or mixed, private or public) has effect on the academic performance of students in Mathematics.

Several factors have generally been identified as predictive of poor academic achievement. Grace Hermas Nghambi (2014) reported that a teacher who does not have both the academic and the professional teaching qualification would undoubtedly have a negative influence on the teaching and learning of his/her subject. Apart from qualification, other teachers' variables still exist such as teacher gender, teacher knowledge etc which can either positively or negatively predict pupils' mathematics performance.

Assessment tools are primarily designed to help educators to identify the strengths and weaknesses of learner's intellectual skills (Bladders, 2000). When educators carry out assessment, they observe the child to get information about what he knows and what he/she can do. Observing and documenting and a child's work and performance over a course of a year, allow an educator to accumulate a record of a child's growth and development (Oduolowo, 2011). With this information, educators can begin to plan appropriate curriculum and effective individualized instructions for each child. This assessment record is also a great tool to share with parents to follow their child's progress at school, understand their child's strengths and challenges, and plan how they can help extend the learning at homes. The process of planning activity that provides information about pupils, understanding and skill regarding a specific measurement topic, is commonly known as assessment (Marzano, 2006).

Statement of the Problem

Numeracy is one of the core areas of learning that children are exposed to, however, poor academic performance of pupils in Numeracy has been established in several literature. Previous studies in Nigeria to the best knowledge of the researcher knowledge on improving numeracy learning outcomes, focused only on the primary and secondary school children neglecting the pre-schoolers. Most of these studies only sought to address the numeracy performance without looking at the weight of structural and process qualities on the inculcation of numeracy skill. In spite of the effort of several scholars who have tried to solve this problem of poor performance in the subject using so many factors such as teacher related factors, school related factors, pupils related factors and others, the problem of massive poor performance in numeracy still persists.

In addition, none of these scholars have looked into the influence of structural qualities (Playground, classrooms size and furniture) and process qualities (curriculum, teacher qualification, assessment) on pupils' performance in Numeracy. From the foregoing this study therefore, intended to investigate the influence of structural (Playground, classrooms and

furniture) and process (Curriculum, teacher qualification, and assessment) qualities on the numeracy performance of pre-schoolers.

Purpose of the Study

This study examined the influence of structural and process qualities of Early Childhood Education centres on pre-schoolers' numeracy performance in Ilorin East Local Government Area, Kwara State. Specifically, this study found out:

1. The extent of structural qualities of Early Childhood Education centres in Ilorin East Local Government Area in terms of playground, classroom and furniture.
2. The extent of process qualities of Early Childhood Education centres in Ilorin East Local Government Area in terms of curriculum, teacher qualification and assessment.
3. Numeracy performance of preschoolers in Ilorin East Local Government Area
4. Determine significant influence of structural qualities on pre-schoolers' numeracy performance.
5. Determine significant influence of process qualities on pre-schoolers' numeracy performance.

Research Questions

In order to guide the conduct of this study, the following research questions were raised:

1. What is the extent of structural qualities of Early Childhood Education centres in Ilorin East Local Government Area of Kwara State in terms of:
    a. Playground?
    b. Classroom?
    c. Furniture?
2. What is the extent of process qualities of ECE centres in Ilorin East Local Government Area of Kwara State in terms of:
    a. Curriculum?
    b. Teacher qualification?
    c. Assessment?

3. What is the numeracy performance of preschoolers in Ilorin East Local Government Area of Kwara State?

Hypotheses

The following null hypotheses were raised and tested at 0.05 level of significance;

Ho1: There is no significant influence of structural qualities on preschoolers' numeracy performance.

Ho2: There is no significant influence of process qualities on pre-schoolers' Numeracy performance.

Significance of the Study

It is expected that the findings of this study would be of benefit to teachers, preschool children, parents, curriculum planners and policy formulators. This will help the children acquire the basic knowledge of arithmetic prior to their primary level of education. The findings from this study will inform early childhood educators, caregivers and teachers on the importance and the role of adequate structural and process qualities in the attainment of numeracy skills in preschool children for optimal development and future achievements.

This findings will also avail to parent on the roles structural and process qualities plays in their wards numeracy skills development and critical thinking which are essential for problem solving and creativity in their children.

This findings will also guide curriculum planners on the need to come up with essential learning experiences, that will help children to acquire necessary knowledge and skills that will guarantee all round development.

Finally, the findings of the study if published will inform the government, policy makers and all stakeholders in educational sector on the need for appropriate structural and process qualities in inculcation of numeracy skill in preschoolers for effective performance, and future achievements. The study is therefore, significant because whatever the child is exposed to in the early years of preschool age stays with the child throughout his or her life. The result will

add to the body of existing literature in early childhood education particularly, as it relates to structural and process qualities in building numeracy skills in preschool children

Delimitation of the study

The study investigated the influence of Structural (playground, classroom and furniture) and process (curriculum, teacher qualification, and assessment) qualities on preschooler's numeracy performance. Preschool children ages 3-5 years participated in the study. This study was carried out in Ilorin East Local Government Area, Kwara State.

Operational Definition of Terms

The following terms were operationally defined

Early childhood education: This refers to, in this study, the education given to children between the period of birth to age 8 which is essential for children's physical, cognitive, emotional and social development.

Early years: This refers to the most critical period for the holistic development of children and success in later life.

Structural Qualities: In this study refers to playground, classrooms size and furniture

Numeracy Performance: This is the learning outcome of preschoolers' in numeracy

Process Qualities: In this study refers to curriculum, teacher qualifications and assessment.

Preschooler: In this study refers to pupils in the class before primary school.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter is reviewed under the following sub-headings

Theoretical Review

Lev Semenovich Vygotsky's Socio-Cultural Theory of Development, 1978

Conceptual Review

Early Childhood Education in Nigeria

Importance of Early Childhood Education

Concept of Structural Qualities

Concept of Process Qualities

Pre-schoolers' Numeracy Performance

Empirical Review

Structural Qualities and Children's Performance in Numeracy

Process Qualities and Children' Performance in Numeracy

Appraisal of Literature Reviewed

Theoretical Review

This study was based on Socio-cultural theory of Development by Lev Semenovich Vygotsky

Lev Semenovich Vygotsky's Socio-Cultural Theory of Development, 1978

The socio-cultural theory of development was propounded by Lev Semenovich Vygotsky (1896-1934). Vygotsky's main work was in developmental psychology, and he proposed a theory of the development of "higher psychological functions" that saw human psychological development as emerging through interpersonal connections and actions with the social environment. During the earlier mechanistic and reductionist "instrumental psychology" period of his career (1920s), he argued that human psychological development was mediated by signs that he viewed as psychological equivalent of instrument use in human labour and industry (Yasnitsky & van der Veer, 2015). Vygotsky's work was largely unknown to the West until it was published in 1962. Vygotsky's theory is one of the foundations of constructivism. It asserts three major themes regarding social interaction, the more knowledgeable other, and the zone of proximal development. This study therefore, laid more emphasis on Vygotsky's social interaction concept as more direct and relevant to this work.

Social interaction plays a fundamental role in the process of cognitive development. In contrast to Jean Piaget's understanding of child development (in which development necessarily precedes learning), Vygotsky felt social learning precedes development. He states: Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (inter-psychological) and then inside the child (intra psychological) (Vygotsky, 1978).

Six major assumptions guide Vygotsky's theory.

1. The first assumption of Vygotsky's theory is that through both formal and informal conversations and education adults convey to children the way their culture interprets and responds to the world. Specifically, as adult interact with children, they show the meanings they attach to objects, event and experiences.

   Returning to our example, the father is now reading to his daughter a book about transportation. The book describes the different modes of transportation we use in our

society (such as cars, trucks and boats). By presenting these concepts, the book shows the little girl how our society classifies mode of transportation.

2. The second assumption of Vygotsky's theory is that thought and language become increasingly independent in the first few years of life.

3. The third assumption explains that complex mental processes begin as a social activities. As children develop, they gradually internalize processes they use in social contexts and begin to use them independently. This internalization process allows children to transform ideas and processes to make them uniquely their own. Returning to our example, the child and father are simply reading a book, but this social activity is transforming the way the child perceives mode of transportation. She will begin to classify these items herself when she sees cars, trucks and boats in real-life settings.

4. Next assumption is that challenging tasks promote maximum cognitive growth. Vygotsky described this as the Zone of Proximal Development. Zone of Proximal Development is the range of tasks that a child can perform with the help and guidance of others but cannot yet perform independently.

5. Vygotsky also introduced the idea that children can perform more challenging tasks when assisted by more advanced and competent individuals. He identified two levels of development; Actual development which is the upper limit of tasks a child can perform individually, Level of potential development, which is the upper limit of tasks a child can perform with the assistance of a more competent individual. According to Vygotsky, in order to get a true assessment of a child's actual and potential development, we should assess capabilities both when the child is performing the activity alone and with a more competent individual. For example, our young child exhibited that her actual development was that she knew the blocks belonged in the holes, but she couldn't quite determine how to actually put them in. Her level of potential development was being able to put the blocks in with the help of her father, an advanced individual. The child is not expert then be able

to sort the blocks into colours and sharps, or to do anything beyond these skills that she exhibited with the assistance of her father at this point.

6. Our final assumption is that play allows children to stretch themselves cognitively. Play allows children to take on roles they would normally not be able to perform in real life. Let's return to our example. Our same little girl who was playing with the blocks is now five years old. She's playing house with a friend. She is the mother and her friend is the child. Through making-believe play, she is able to exhibit behaviours and be a mommy according to the rules of her society. For example, a mommy takes care of her child, prepares food, etc. That would normally be impossible for a five years old in real-life to do.

Lev Vygotsky was a psychologist who believed that children learn about their world through physical interaction. Vygotsky's socio cultural theory asserts that learning is an essential social process in which the support of parents, caregivers, peers and the wider society and culture plays a crucial role in the development of higher psychological functions. Lev Vygotsky is best known for his socio cultural theory. He believed that social interaction plays a critical role in children's learning. Through such social interactions, children go through a continuous process of learning. Vygotsky noted, however, that culture profoundly influences this process. Imitation, guided learning, and collaborative learning all play a critical part in his theory. Lev Vygotsky, a Russian psychologist, developed a theory of cognitive development known as the Socio cultural Theory of Cognitive Development in the early twentieth century. The main assertion of the Vygotsky theory is that the cognitive development of children is advanced through social interaction with other people, particularly those who are more skilled. In other words, Vygotsky believed that social learning comes before cognitive development, and that children construct knowledge actively. Zone of Proximal Development Vygotsky is most recognized for his concept of Zone of Proximal Development pertaining to the learning process of children.

According to the Vygotsky theory, children who are in the Zone of Proximal Development for a particular task can almost perform the task independently, but not quite there yet. They need

some help in order to perform the task successfully. For example, a five-year-old child knows how to ride a tricycle. However, she can not ride a bicycle (with two wheels) without his grandfather holding onto the back of her bike. With his grandfather's help, this little girl learns to balance her bike. With some more practice, she can ride the bike on her own. In this scenario, we can say that the child is in the zone of proximal development for riding a bike. The concept of Zone of Proximal Development underscores Vygotsky's conviction that social influence, particularly getting instructions from someone, are of immense importance on the cognitive development of children. As children are given instructions or shown how to perform certain tasks, they organize the new information received in their existing mental schemas. They use this information as guides on how to perform these tasks and eventually learn to perform them independently. (More Knowledgeable than other). According to Vygotsky's theory of cognitive development, children learn through social interaction that includes collaborative and cooperative dialogue with someone who is more skilled in tasks they're trying to learn. Vygotsky called these people with higher skill level the More Knowledgeable Other. They could be teachers, parents, tutors and even peers. In the example of a five-year-old girl learning to ride a bike, her grandfather not only holds onto the back of the bike, but also verbally teaches the little girl how to balance her bike. From the little girl's point of view, her grandfather is a More Knowledgeable Other.

Many schools have traditionally held a transmission or instruction model in which a teacher or lecturer transmits information to students. In contrast, Vygotsky's theory promotes learning contexts in which students play an active role in learning. Roles of the teacher and student are therefore shifted, as a teacher should collaborate with his or her students in order to help facilitate meaning construction in students. Learning therefore becomes a reciprocal experience for the students and teacher. It was deduced that social interaction precedes development; consciousness and cognition are the end product of socialization and social behavior. Therefore, as this study is concerned, structural and process qualities as well as the other peers, became the child's social environment more so that the teaching and learning of numeracy as a concept

was carried out in an appropriate structural environment which makes learning culturally appropriate.

Conceptual Review

Concept of Early Childhood Education

Education is considered as an instrument for both self and national development, the need for education type that would unleash fully in children all the potentials and prepare children for future achievements is found within the early childhood setting. Early Childhood Education (ECE) is generally aimed at promoting holistic development of children from birth to age 8. According to Olowe, Kutelu, and Majebi (2014), ECE is any programme that is designed to promote children's intellectual development, socio-emotional development, language development, physical development and learning from birth to age 8. Sooter (2013) agreed with Mahuta (2007) by stating the aims of ECE to include fostering proper development of children, identifying and addressing their problems, harnessing their potentials, molding their characters, enhancing their learning and equipping them for life so that their actions are channelled towards positive personal, communal and global development.

It is pertinent to note that all ECE activities and programmes are geared towards giving positive early experiences to children. This further underscores the importance of early childhood education. The government of Nigeria is among the member states that ratified these documents and goals, and this has made the government to come up with various interventions which are geared towards providing quality ECE for Nigerian children. As part of the interventions of the government in ECE, there was enactment of UBE Act (2004) which has an expanded scope that includes programmes and initiatives for early childhood education and development (UNESCOIBE, 2006). The UBE programme made provision for every public primary school to have a pre-primary school linkage to cater for children, and this resulted in increased government ownership and participation in ECE provisions (UNESCO-IBE, 2006). Osanyin (2012) noted that there was the development of National Minimum Standard for Early Child

Care Centers in Nigeria. In the same vein, Oguntuashe (2010) reported the development of curriculum for in service teacher training and IECD caregiver training manual.

Another notable intervention is the development of a policy referred to as National Policy for Integrated Early Childhood Development that integrates interventions from various sectors to promote an integrated holistic approach to the development of the child (FGN, 2007). One other intervention that worth mentioning is the development of a unified early childhood education curriculum which was all encompassing and divided into two sections to cater for age 0-3 and 3-5 years respectively. Again, the federal government included ECCE programmes in curriculum of Colleges of Education. The most recent innovation seems to be the new National Policy on Education (2013 edition) in which the programme of ECE is brought under Basic Education in Section. It is now divided into two programmes namely Early Childhood Care, Development and Education (ECCDE) and Kindergarten Education.

Early Childhood Education is the education given to children between the period of 0-8 which is essential for children's physical, cognitive, emotional and social development. This level of education should be given detailed attention and care because it provides a good head start for children.

However, children who live in societies that value and give priority to Early Childhood Care and Education would benefit greatly from it. According to Osakwe (2009) and Nafi'u (2016), the benefits of Early Childhood Education is that Nigerian children who had access to Early Childhood Education were better physically, socially and intellectually than those who had no access to Early Childhood Education. It is in recognition of these benefits of Early Childhood Education and other international documents such as Human Rights, Convention on the Rights of a Child, Education for All, Millennium Development Goals and the Sustainable Development Goals that the Nigerian Government is now becoming more involved in Early Childhood Education is funding the one year pre-primary education, in addition to primary education.

Pre-school education is the education given to children prior to entering primary school (FRN, 2013). The purpose of this level of education is to ensure a smooth transition from home to the primary level of education and to lay the foundation for lifelong learning (Haque,Nasrin,Yesmin & Biswas, 2013). This level of education is considered the appropriate stage

Concept of Structural Quality

It is widely accepted that for early years provision to improve children's performance, it needs to be of high-quality. However, the definition and features of quality are still debated - and greater clarity is needed to improve both policymaking and spending decisions. Different stakeholders might use a different definition of, or place varying weights on, the elements that contribute to a high-quality provision.

Smith (2000) point out that 'many viewpoints on quality can be identified even within one cultural setting - for example the child development, the government or regulatory perspective, the welfare or social services perspective, the parent perspective, the cultural perspective, the social policy and funding perspective, and the child's perspective. How quality is defined depends on the concern of the stakeholder.

In the last few decades, research has made big steps towards the identification of some more universal elements of quality. Initially, early childhood education research was mainly about interventions directed at improving children's cognitive development and school achievement, and at reducing delinquency. It also looked into whether early child care could have a harmful effect on children. A second wave of research, recognising the shortcomings of the previous one, moved onto the topic of quality of the early years settings, from which a number of assessment tools emerged, such as the Early Childhood Environment Rating Scale (ECERS) and the Infant/Toddler Environmental Rating Scale (ITERS). Fenech (2011) comments that 'reviews of this body of research highlight generally accepted understandings (at least in the Western world) as to what constitutes key elements of quality' (p. 103). The third wave of research went further by acknowledging that there are other factors contributing to children's

outcomes beyond the early years setting, such as the family environment and the child characteristics (Fenech, 2011).

Looking at the complex intersection of all these elements, this strand of research has focused on the nature of quality, in an attempt to identify variations across settings and their impact on children's outcomes (Smith et al., 2000). In this respect, Smith et al. (2000) defined quality as 'the essential components of early childhood environments which are valued in our society, and which support the well-being, development and rights of children, and support effective family functioning'. It is this more recent strand of the literature that brought forward the distinction between process quality and structural quality. Process quality relates to the more proximal features of early years provision, such as the presence of a stimulating, developmentally appropriate environment; positive interactions between staff and children and among peers; and parental involvement. More specifically, process quality involves 'social, emotional, physical, and instructional elements of interactions with young children, elements that are reflected at several levels of the classroom environment: moment-to-moment displays of discrete behaviors as well as global characterizations of the overall setting' (Pianta et al., 2005). Structural quality relates to inputs that are more easily observed, measured and regulated (Slot, Leseman, Verhagen, & Mulder, 2015; Smith et al., 2000).

Structural Quality, refers to the standard or state of infrastructure, amenities, facilities, training programs, of staff as pre qualifications and equipment provided and how they are arranged, organized and being put to use. Structural quality is also seen as to entails the digital and regulable factors such as child-staff ration, Group size and staff training/Education (Abbot-slim, Lamber & McCarty, 2000). This has to do with best practice been stipulated by the minimum standard for setting up an early childhood education centres in Nigeria. By ensuring it has adequate and good nutrition plan, Health care, Protection and safe environment for the children. School Location and Security should be such that it is safe and free from hazards, fumes or spillage from industrial waste that could be harmful to the children, the school should

be located on a topography that is not prone to erosion or unfavourable weather condition that will endanger the lives of the children and staff.

The school should be properly fenced with security guard. The proximity of the school to town or city, should be such that, it is not far from the town or city or possibly, located within the town or city. The school should be located within the range of available security coverage accessible. Indoor Structure: This refers to the internal arrangement of the school especially the classrooms, flooring should be safe for the children. Classroom structure must be spacious enough and support good ventilation, the window properly secured and safe for their children, staff and document when they are inside. The classrooms properly lighten for the children to see properly for teaching and learning purpose. Is the sitting arrangement in classes of different ages developmentally appropriate, will not constitute accident of any form to the child, does the spacing of the seats and table in classrooms convenient for the children and educator to move freely within and around the class for sound teaching and learning process. Floor of each class should be safe for the children to manoeuvre without any treat of accident, the floor should not be slippery to harm when they try to move around, but it should be smooth. Is the number of learner to an educator/care provider should be in conformity with the minimum standard of 15 to 20 learners to an educator/care provider.

The roofing should be properly done such that it will not be licking water on the children when it rains. Modern ceiling should be used. Not asbestos that pose treat on the children at any time. The wall should be cemented blocks or mud that will not pose any treat to the occupants. The door should be wooden that will be convenient for the children without treat of any kind. Provision of board be it movable or fixed. Is the chalk board or electronic or marker board provided in the class room convenient for use and support best practice. Is there learning centres in these classes like science, ICT, Literacy numeracy and the likes. That the children will be exposing to and explore. Is the classroom simulating enough to captivate the attention of the children to observe experiment, analyze and come up with ideas and learn how to do things on their own? Are the furniture provided, child sized and ages appropriate, which include chairs,

tables, mats, beds, round tables, mattresses, Macintosh, bed sheets and the like. Is the playground safe and secure in line with developmentally appropriate practice for the child to play. Is the equipment and facilities provided in line with accepted standard, are they relevant and useful to children of diverse age, sex and children with special educational needs, like the blind, deaf and the likes.

Are facilities provided and well accommodated and secured fully utilized, also the equipments/facilities are they appealing to children of diverse learning needs and age. These equipments are they developmentally appropriate, that is age appropriate, culture appropriate, social appropriate does it appeal to individual child's interest. Equipments that support teaching learning are they gender friendly. Chart/posters/pictures should be provided inform of instructional materials which are used in classroom. Are they provided? Does it embrace diverse culture that is they are not cultural bias rather it support culture integration and gender friendly. Outdoor structure, playground environment, is it properly fenced and secured to prevent strangers from having access to the learners unnoticed when they are having outdoor activities. Is the nature of the fence security base or ordinary fence? Structural features are precondition for process quality. Process quality concern with the moral proximal processes of children's every day and involves the social, emotional, physical and instructional aspect of staff-child and peer interactions while being involved in play activities or routines (Ander, 2015 Barros et al 2016).

Concept of Process Quality

Process quality refers to the nature of the care that children receive, which should reflect developmentally appropriate practice and complaint to best practice as champion by national association of education of young children. Process in this context, features the media and avenue where learning experiences, opportunities made available, the content of curriculum in place, communication in times of teaching and learning provided or in place, Are they friendly to the children? Does it appeal to children interest, is the process accommodative to children with diverse educational needs, different ages, socio economic background, does the curriculum and methodology support children all round development. Process should also be

staff friendly in times of placement, training opportunities, their remuneration and welfare which will guarantee having the best from the staff.

Quality teachers are considered to be those who bring about pupils' learning. The report by the Ministry of Education (2010) made teaching the core of its three simple promises in its blueprint for reforming the Nation's schools. They were: what teachers knew and could do (academic and professional qualification) was the most important influence on what pupils learnt. Recruiting, preparing and retaining good teachers were the central strategy for improving schools. School reform could not succeed unless it focused on creating the conditions under which teachers could teach well. Teacher qualifications show an important but complex relationship to pupils‟ outcome (Alao, 2006).

Highly qualified teachers can have very marked impacts on the outcomes for diverse pupils. Pupils learn more from teachers with high academic skills than teachers with weak academic skills. Nbina (2007), the effectiveness on any curriculum depends on the quality of teachers that are there to translate the syllabus into practical instructional material in class. According to Aremu, (1982), "Effective teaching is a mode that produces inquiring, considering and seeking out at the correct or incorrect results and ability in teaching. In Ireland, primary school teachers must be qualified to teach the range of primary school subjects to children aged 4 to 12 years. To qualify as a primary school teacher, you must have completed one of the following: A recognized full-time degree program, leading to the Bachelor of Education (B.Ed.) degree. A recognized Professional Masters in Education (Primary). Teachers play a key role in assisting learners to acquire and use language skills.

It is the teacher who introduces Literacy studies to the child in class. Ojebisi (2014) agrees that it is the responsibility of all teachers of Literacy to assist all pupils in the development of their ability to speak and write better language. A teacher, therefore, is a key person in assisting and developing children's proficiency in language. Owolabi (2003) contends that the task of molding students so that they express themselves effectively both orally and in written work lies on the shoulders of the teacher. Through language, teachers are able to provide learners

with experiences that stimulate the acquisition and use of Literacy language skills. Teachers with competencies (knowledge and skills), good academic and professional qualifications in the Literacy language make children acquire language. Adelusi (2003) in her research conducted assets that low academic levels are hindrance to the teachers understanding and grasping content taught in college. She further asserts that illiteracy is overcome through education and that every person should aspire to get good scores in education to solve the arising problems of illiteracy in Nigeria. Irumbi, (1990) and Kabiru, (2000) found out that competence of the teacher is primarily based on her/his academic background and affects a child's learning in class. This means that the higher academic achievements on the performance of the teacher is advantage also to the Ministry of Education since such teachers have an adequate knowledge base that can be utilized in teaching of Literacy in primary schools. Adetunberu (2003) regards teachers‟ academic qualifications as playing a very important role on the children achievements. Adeleke points out that academic qualifications and professional qualifications of a teacher are among the pre-determination factors during the recruitment and selection process of those who are inducted in the teaching profession.

Based upon an examination of thirty-two different studies, Hussein (1990) concluded that the qualification, experience, knowledge and the level of education of teachers have positive effects upon pupils‟ performance in developing countries. A study by Carney as reported in Simmons (1980) revealed similar results that teacher's academic qualification and certification at primary and secondary level had a positive influence on pupil's performance. Eshiwani (2003) in his study in Western Province in Nigeria is relevant to this study because a teacher's professional qualifications affect students‟ performance, however, the study differs with the current one in that it looks at school performance in general while the present study aims out establishing school-based factors influencing pupil's performance in Literacy language in Kano State, Nigeria . This study intends to fill the gap by establishing the influence of qualifications of teachers of Literacy in pupil's performance in Literacy in public primary schools in Kano State.

A healthy synergy that exist among these stakeholders, friendly enough and welcome contributions and participation of interested stakeholder to support realized the desired objective which is the child all round development in line with best practice and in tune with National Association of the Education of Young Children. Related literature reviewed, try to look at the relationship between structural characteristics and process quality in early childhood centres and family day care provided for children from birth to age 8. Structural characteristics were accessed at early childhood centres, both system, organizational, classroom and staff levels, and it was discovered at various levels of comparison, there were varying significant different observed (OECD).

The inability of previous studies to examine structural and process quality particularly if there were private and public early childhood centres, constitute the gaps this study. Early childhood education centres are increasingly springing out and the subscription for the program is on the increase yet no cares to check the quality in terms of structures, process and products, or whether they are following the minimum standard as specified by the government or inconformity with best practice, championed by National Association of the Education of Young children (NAEYC). Hence, the need of this research to assess the structural and process quality in early childhood education centres both private and public centres in the area stated above.

Pre-schoolers' Numeracy Performance

Increasingly, nations need a skilled, knowledgeable workforce and a citizenry equipped to function in a complex world. This can only be achieved through a sound understanding of science and technology. Science is a major tool for change in the modern world. Science is most often referred to as a way of pursuing knowledge. It is associated with scientific method itself, as a disciplined way to study natural world. Science is the bedrock of all technological advancement (Onifade, 2001) the scientific feat has turned the world into a global village and turned those who are not technologically advanced to mere pawns in the game of survival. There is an increasing demand for professional practicing scientists everywhere. There is rapid increase in scientific knowledge, which has resulted in a mass of new materials being

incorporated into the school syllabus. Science is a systematic enterprise that builds and organizes knowledge in form of testable explanations and predictions about the universe.

Numeracy is bedrock of science and technology, without mathematics there is no real development in science and technology (Ezielo, 2015). Numeracy has all through the years been an important subject both in the role it plays in everyday activities and in its usefulness to other sciences. Numeracy is a body of knowledge centred on concepts such as quantity, structure, space, change and also the academic discipline that studies them (Pierce, 2007).

Numeracy (Mathematics) is further defined by Pierce as the science that draws necessary conclusions. Other practitioners of numeracy (mathematics) such as Sowmya (2005) maintains that Numeracy is a science of pattern and highly needed in everyday life. According to Agwagah (2008), numeracy is the study of numbers, shapes, quantity, structure, and change or described things (Macmillan Dictionary, 2007). Carl Friedrich Gauss (1777-1855) known as the "Prince of Mathematicians" also refers mathematics to as "the Queen of the Sciences" and the bedrock of other sciences. These definitions emphasize the importance of mathematics. Numeracy is widely used throughout the world, in human life and many fields including Social Sciences, Natural Sciences, Engineering, Medicine and Education. It is a vital tool in science, commerce and technology. According to Iji (2007) mathematics provides an important key to understanding of the world. In the areas of buying and selling, communication, timing, measurement, molding, recording among others, the importance is highly acknowledged. Numeracy (Mathematics) is one of the core subjects in primary, junior and senior secondary school curricula in Nigeria, which justifies its recognition as being essential in the development of technological advancement in Nigeria. The Federal Government of Nigeria made numeracy (Mathematics) compulsory and one of the core subjects in both primary and secondary schools because of its usefulness (FGN, 2013). Some of the roles of mathematics according to Nurudeen (2007) Its ability to enhance the thinking capabilities of individuals by making them to be more creative, reasonable, rational as well as imaginative. There is no school curriculum

or a national development planning which does not take cognisance of the usefulness and development in school mathematics.

Despite the importance of numeracy (Mathematics), there are a number of observable problems associated with its teaching and learning, especially at the pre-primary school level. These problems include poor method of instruction (Kalijah, 2002). This is supported by the assertion of Agommuoh and Nzewi (2003) that attributed the deterioration in students' achievement in Numeracy (Mathematics) to ineffective method of teaching. It requires the ability to use algebra and geometry, this makes the learning of Numeracy particularly difficult for many students (Redish, 2014). Ogunleye (2001) observed the lack of adequate qualified and experienced mathematics teachers and of laboratory equipment as two major recurring problems of teaching mathematics in secondary schools. Angell (2004) figured out that students find mathematics difficult because they have to contend with different representations such as formulas and calculations, graphs and conceptual explanations at the same time. In developed countries, it has been observed that students' success in Numeracy is lower than chemistry and biology, that students do not like science lectures and that most have no preference for science, particularly physics (Rward & Straw, 2000; Mattern & Schau 2002).

It is claimed that academic success or failure is related to many factors. In general, various studies that attempt to explain academic success or failure to do so by beginning with three elements that intervene in education; parents (family causal factor), students (personal causal factor) and teachers (academic causal factors) (Diaz, 2003). However, students' dwindling performance in Physics in public examinations is so worrisome and this has led many researchers into investigating the factors that could be responsible for this. Among the variables identified are: Students' poor study habit, low self-esteem, teacher factors (teacher quality), shortage of qualified teachers, inadequate teaching facilities in Schools, home and school environmental factors, and so on Adodo (2007) argue that one key overriding factor for the success of students' academic achievement is the teacher. Orleans (2007) assert that the key factor in what comes out at the end of schooling is what goes on in the classroom. Mills (as

cited in Wambugu and Changeiywo, 2008) state that teaching methods are crucial factors that affect the academic achievement of students, and no matter how well-developed and comprehensive a curriculum is, its success is dependent on the quality of the teachers implementing it (Ughamadu, 2005; Ajaja, 2009). Usman (2003) argue that shortage of qualified teachers is responsible for the poor academic achievement observable among the students. The West African Examination Council (2009) report outline that "poor knowledge of subject matter, inadequate preparation and poor labelling of diagrams were some of the weaknesses that adversely affected candidates' performance.

Empirical Review

Structural Qualities and Pre-schoolers' Numeracy performance

Adeluku (2012) investigated the influence of instructional materials in teaching and learning of Mathematics in senior secondary schools in Cross River State. A two group pre-test post-test quasi-experimental design was adopted for the study. One research question and one hypothesis were formulated to guide the study. A total of 100 senior secondary one (SSI) mathematics students were selected from five (5) schools in Yankuur Local Government Area of Cross River State through simple random sampling and stratified random sampling techniques. Fifty SSI students (experimental group) were taught with instructional materials and another forty (control group) were taught without instructional materials. A validated mathematics achievement test was used to gather data for the study and split –half was carried out using the Pearson Product Moment Correlation Coefficients to obtain the reliability coefficient of 0.67. Independent t-test was used to test the hypothesis at 0.05 significant levels while the Pearson Product Moment Correlation Coefficient was used to test the hypothesis at the 0.05 levels of significance. The study revealed that students taught with instructional materials performed significantly better than those taught without instructional materials and also that the use of instructional materials generally improved students' understanding of concepts and led to high academic achievements.

Maruff and Amos (2011) examined the effect of using standardized and improvised instructional materials on academic achievement of secondary school mathematics students in Oyo State, Nigeria. The research design adopted was quasi-experimental using pre-test post - test non-randomized control group. Purposive sampling technique was used to obtain a sample of three co-educational secondary schools. Each school provided one SSIII class for the study. Two instruments were used in the study, the mathematics achievement test to measure students' achievement and teachers' instructional guide to train the teachers in the experimental groups. The instrument was pilot tested to ascertain reliability. The reliability coefficient was 0.76. Three hypotheses were formulated and tested at the 0.05 level of significance. Data were analyzed using ANOVA and ANCOVA. Findings revealed that there was a significant difference in the achievement of students taught using standard instructional materials, those taught with improvised instructional materials over those in the conventional instruction. Thus, the students taught with improvised instructional materials obtained the highest achievement score at post- test (F=74.94), followed by those with standard instructional materials (F=63.07), while the control group scored the lowest (F=39.89). Also, there was no significant effect of gender on students' achievement in mathematics. Finally, there were no significant interaction effects of treatment and gender on students' achievement in mathematics. The researcher concluded that the utilization of improvised instructional materials promote and enhance effective teaching –learning process, thus, mathematics teachers should be encouraged to use them in their lessons.

Oluwale (2010) examined the effect of mathematic instructional materials on the learning and teaching of mathematics as well the effect of these instructional materials on the academic performance of some secondary school students in Isolo Local Government Area of Lagos State. A well designed and simple questionnaire was distributed to mathematics teacher in these selected schools to accurately evaluate the effect of instructional materials on the application of learning mathematics in secondary schools in Nigeria. The researcher adopted the survey research design with a sample of 20 teachers and eighty (80) students selected randomly. A

questionnaire was used to collect the data. The findings after testing hypotheses, three indicate that there was significant positive difference in the performance of secondary school students in mathematics when they were taught the subject with instructional materials in the teaching and learning of mathematics, obviously improves the performance of the students. If facilities have been found to be related to academic performance, as reiterated by Ayodele (2000), Cynthia and Megan (2008), and Philias and Wanjobi (2011), one expects a better performance in private schools than in public schools. In any case, private school proprietors appear to inject more funds on facilities than public schools. In hypothesis two, the study revealed that there is no significant difference in the academic performance of students in public and private senior secondary schools in Ondo State. This study disagreed with the work of Philias and Wanjobi (2011) who reiterated that the type of schools, (single sex or mixed, private or public) has effect on the academic performance of students in Mathematics.

Process Qualities and Numeracy performance

In a study by Dauda et al (2016), Teacher and Teaching Effects on Students' Academic Performance, Attitudes, and Behaviors, the finding of the study in respect to research question one revealed that mathematics teachers' and students' perception of qualification as one of the factors considered to have an adverse effect on teaching and learning of mathematics was in agreement by the majority of respondents. On the whole, it could be observed that the means and standard deviation on students' responses on teachers' qualification showed that most of the students do not have effective teaching of mathematics and that concurred with the finding of Soyibo (1986), Fakeye (2012) who investigated the extent to which teachers qualification and subject mastery could predict students' achievement in mathematics among senior secondary school students in Ibarapa in Oyo state and found that teachers' teaching qualification has an important relative contribution to students' academic achievement. The finding is not in agreement with Umar (2013) who examine the effect of teachers' qualification on performance in mathematics among senior secondary school students in Kaduna state and found that significant difference existed between students' performance on account of their

teachers' qualification. The finding of Etuk, Afangideh and Abubakar (2013) and Adediwura (2007) found that lack of qualified mathematic teachers in most of the secondary schools is one of the most significant factors affecting the academic performance of students in the same vein, which is not far from the findings of this study. Therefore, the qualification of mathematics teachers was really an issue of utmost concern which needs to be looked into with serious concern by both Federal and State Government because the key to quality education in our schools is the availability of well qualified and competent teachers.

The findings of the study in respect to research question two reveals that teaching method has significant influence on students' academic performance in senior secondary mathematics in Maiduguri Metropolis, Borno State. This result agrees with Saritas and Akdemir (2009) who conducted a study on identifying factors affecting the mathematics achievement of students for better instructional design and found that instructional strategies and methods, teacher competence in mathematics and motivation or concentration were the three most influential factors that should be considered in the design decision. The finding underscores the submission made by Umoren (2001) in a research on the method of teaching like the ability of the teacher to impact knowledge so depends greatly on the methods he applies during-learning process. Where the method is defective the students' stands to lose as they hardly benefit from the lessons.

It also underscores Adediwura and Tayo (2007) description of method of teaching as pattern to be followed in teaching/learning process to drive home appoint. Whether in formal or informal education, teaching method effectiveness makes for retention of learnt concept. The extent to which an instructional procedure is portended depends greatly upon its effective use by the instructor and the impression it leaves on the learner which is usually evident in their attitude as well as performance. The findings calls for Uya (2008) that for teachers to be able to ensure order and enhance classroom learning, they have to possess necessary pedagogical skills which have to be systematic and methodical. They have to explore and make good use of their

knowledge of instructional skills/strategies, whether the method adopted falls within the spectrum of mass or individualized instructional method.

Esu (2003) opinion that teaching by its nature requires a variety of method to facilitate teaching and learning in the class and to develop the child's knowledge and understanding to the maximum is significant in this respect. The quality of teachers of Literacy determines a great deal the performance of their pupils. Eshiwani (2003) asserts that a teacher's qualification correlates with the quality of knowledge imparted in their learners. He argues

that untrained Mathematics teachers in both primary and secondary schools should be trained to enable them know and use proper instructional methods. Teachers are among the main orchestrates of the school 'culture' by the kind of conditions they create in classrooms and the school in general. Eshiwani (2003) this study is relevant because a teacher's professional qualifications affects students' performance, however, the study differs with the current one in that it looks at school performance in general while the present study aims out establishing school-based factors influencing student's performance in Literacy language.

These conditions must create interest and curiosity for pupils to know and to learn the teacher, through their disposition support them. Teachers therefore, should be mentors and explainers. As mentors the teachers have the authority to criticize constructively, command and reflect, and also develop a building relationship with the pupils. Teachers as explainers should create an environment that is not boring but enhancing for the pupils to learn and think. It can therefore be concluded that, a teacher's role centers on integrity, humor, communication, learning and organization precepts of their creativity (Bett, 1986). Okumbe (1998) points out that academic qualifications and professional qualifications of a teacher are among the pre-determination factors during the recruitment and selection process of those who are inducted in the teaching profession. Based upon an examination of thirty-two different studies, Husen (1978) concluded that the qualification, experience, knowledge and the level of education of teacher shave positive effects upon students' performance in developing countries. A study by Carney as

reported in Simon's (1980) revealed similar results that teacher's academic qualification and certification at primary and secondary level has a positive influence on student's performance.

Appraisal of Literature Review

The literature review was focused on the studies related to numeracy as it relates to development of children. A close examination of the literature reviewed revealed that most of the studies and related literature reviewed were foreign and they are fully related to the study. The literature were particularly focused on structural and process quality and development of numeracy to higher order mathematics and problem solving in later life of children, others looked at the development of the related skills like reasoning, language and socio-interaction. From the reviewed literatures, it shows that there are a good numbers of studies that influence children's numeracy performance; however the researcher observed that there are few studies on some aspect of structural and process qualities in building numeracy skills of children especially the pre-schoolers which is the research lacuna this study sought to fill.

CHAPTER THREE
METHODOLOGY

This chapter discusses the methods and procedure used by the researcher to carry out the study. It comprised the research design, population, sample and sampling techniques, research instruments, validity and reliability of the instruments, as well as procedure for data collection, and method of data analysis.

Research Design

This study adopted descriptive survey research design. According to Adedoyin (2011), survey research design is defined as one which describes and reports a phenomenon as it is, wherein nothing is manipulated. According to Salaria (2012), a descriptive survey is a method of research that deals with present phenomena in terms of conditions, practices, processes, or trends between or among some number of variables such as playground, classroom and furniture, curriculum, teacher qualification and assessment among others. The idea behind using this type of research is to enable the researcher to better define the opinion of the respondents and views as regards the influence of structural and process qualities on preschooler's numeracy performance in early childhood education centres in *Ilorin East Local Government Area.*

Population of the Study

The population of this study are all pre-schools, teachers and pre-schoolers both in public and private ECE Centres in Ilorin East Local Government Area. There are 8,464 children in the 152 existing pre-schools in Ilorin East Local Government Area (Kwara State School Census Report 2018-2019).

Sample and Sampling Techniques

The sample of the study was 15 ECE centres representing 10% of all ECE centres in Ilorin East Local Government Area. This 10% was selected in line with Burg and Gall (1971). Simple random sampling technique was used to select one pre-school teacher in nursery two classes from each of the 15 ECE centres that were used in the study amounting to 15 teachers. Total enumeration was used to pick one intact class each from the 15 ECE Centres which amounted to 290 children that were involved for the study.

Research Instruments

Three self-designed instruments were used in this study to rate six items on playground, seven on classroom size, five items on furniture and four on numeracy performance scale which are:

Rating Scale on Children Numeracy Performance (RSCNP) RSCNP was designed to rate the performance of pre-schoolers in Numeracy. It was made up of ten (10) preschool Numeracy questions. The instrument was validated by some selected numeracy teachers in pre-primary schools and some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete and the reliability coefficient of the instrument was established at 0.76 using Pearson Product Moment Correlation (PPMC)

Preschool Structural Quality Rating Scale (PSQRS) Preschool Structural Quality Rating Scale (PSQRS) is designed to rate the qualities of playground on a three point modified Likert scale of Available and Appropriate (AA) Not Available (NA), Available Not Appropriate (ANA) with six items, Classroom on a three point modified Likert scale of Available and Appropriate (AA), Not Available (NA), Available and Not Appropriate (ANA) with seven items and furniture on a three point modified Likert scale of Available and Appropriate (AA), Not Available (NA), Available and Not Appropriate (ANA) with five items. The instrument was validated by some selected teachers in pre-primary schools and some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete and the reliability coefficient of the instrument was established at 0.71using Pearson Product Moment Correlation (PPMC)

Preschool Process Quality Rating Scale (PPQRS).Preschool Process Quality Rating Scale (PPQRS) is designed to rate the qualities of school curriculum, teacher qualification and assessment method and it was modified also on three Likert scale of Available and Appropriate (AA), Not Available (NA), Available and Not Appropriate (ANA). The instrument was validated by some selected teachers in pre-primary schools and some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete and the reliability coefficient of the instrument was established at 0.72 using Pearson Product Moment Correlation (PPMC)

Validity of the Instruments

In this study, all the instruments were given face and content validity. Rating Scale on Children Numeracy Performance (RSCNP), Preschool Structural Quality Rating Scale (PSQRS) and the Preschool Process Quality Rating Scale (PPQRS) were given face and content validity by some selected numeracy teachers in pre-primary schools, researcher's supervisor and some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete.

Reliability of the Instruments

In order to ascertain the reliability of Rating Scale on Children Numeracy Performance (RSCNP), Preschool Structural Quality Rating Scale (PSQRS) and the Preschool Process Quality Rating Scale (PPQRS), 20 copies of the final draft were trial-tested two times on randomly selected schools outside the sampled schools within two weeks interval. Thereafter, the Pearson's Product Moment Correlation Co-efficient was used to establish the reliability coefficient of 0.76, 0.71 and 0.72 respectively as reliability scores which adjudged that the instruments were reliable and suitable for the study.

Procedure for Data Collection

The researcher collected letter of introduction from the Head of Department, Early Childhood and Primary Education, Kwara State University, Malete to get formal access to the schools. The letter of introduction was presented to the Head of each school for permission to carry out the research in the school using the children and teachers in the school as respondents. Two undergraduate students of same department who were passionate and interested in the research topic were involved as research assistants. The research assistants were trained about the topic and the instruments, trained on how to observe, check and collect data from respondents. 2 days during the training session, the researcher briefed the research assistants on the purpose of the study and educated them on how to go to schools and interact with respondents and observe preschools. The data collection lasted for fours week during which the schools, teachers and preschool children were rated. The first week was used to train research assistants. (ECE undergraduate students of the department). The second and third weeks were used for rating

and observation of respondents and preschools. The researcher monitored research assistants properly to ensure all instruments were properly administered and ratings were properly noted to enhance smooth data analysis.

Method of Data Analysis

The descriptive statistics of frequency counts, percentage, mean, standard deviation were used to analyse the demographic data and answer the research questions while inferential statistics of multiple regression was used to test all the hypotheses formulated at 0.05 level of significance. The Null hypotheses were not rejected at significant value greater than 0.05 but rejected at significant value less than 0.05.

The extend of structural and process qualities were determine at decision value of low (0 – 1.44) Average (1.44 – 2.44) and high (2.45 – 3) mean scores.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

This chapter is concerned with data analysis and the results of the study. Demographic data of the respondents were analysed using frequency counts, percentage, mean, standard deviation and to answer the research questions. While inferential statistics of multiple regression was used to test all the hypotheses formulated at 0.05 level of significance.

SECTION A

Table 1: Teachers' Educational Qualification

Teacher Qualification	Frequency	Percentage
NCE	3	20
B.ED	4	26.7
PGDE	0	0
M.ED	0	0
OTHERS	8	53.3
Total	**15**	**100**

Table 1 shows that there are 3 teachers with NCE which accounted for 20%, there are 4 teachers with B.ED which accounted for 26.7%, no teacher with PGDE and M.ED, while there are 8 teachers with other qualification which accounted for 53.3% of the sampled population.

Table 2: Teachers' Teaching Experience

Teacher Experience	Frequency	Percentage
0-5years	3	20
6-10years	9	60
11-15years	3	20
16-20years	0	0
21years and above	0	0
Total	**15**	**100**

Table 2 shows that there are 3 teachers with 0-5years of teaching experience which accounted for 20%, there are 9 teachers with 6-10years of teaching experience which accounted for 60%, there are 3 teachers with 11-15years teaching experience which accounted for 20% of the sampled population but no teacher with 16-2o years and 21 years above have teaching experience.

SECTION B

Research Question 1: What is the extent of structural qualities of ECE centres in Ilorin East Local Government Area of Kwara State in terms of:

a. Playground

b. Classroom

c. Furniture ?

Table 3: Extent of Structural Qualities of ECE Centres in Ilorin East Local Government Area, Kwara State.

S/N	PLAYGROUND	AA	ANA	NA	MEAN
1	Enough space to take 20-25 children to play at a time	14 (93.3)	- -	1 (6.7)	2.87
2	The playground is safe and secured for children	14 (93.3)	1 (6.7)	- -	2.93
3	Not bushy	14 (93.3)	1 (6.7)	- -	2.93
4	Not waterlogged	15 (100)	- -	- -	3.00
5	Free from dangerous objects	13 (86.7)	2 (13.3)	- -	2.87
6	Possesses adequate and developmentally appropriate play materials	6 (60)	9 (60)	- -	2.40
Weighted Average = 2.83					
	CLASSROOM				
1	Recommended size	15 (100)	- -	- -	3.00
2	Recommended flooring	15 (100)	- -	- -	3.00
3	Roof	15 (100)	- -	- -	3.00
4	Walls	15 (100)	- -	- -	3.00
5	Illumination	15 (100)	- -	- -	3.00
6	Door	15 (100)	- -	- -	3.00
7	Corners such as maths, literacy, science etc are neatly arranged	13 (86.7)	2 (13.3)	- -	2.87

Weighted Average = 2.98

	FURNITURE				
1	Child sized chairs	15 (100)	- -	- -	3.00
2	Chalkboard, moveable or not	15 (100)	- -	- -	3.00
3	Colourful and moveable chairs	15 (100)	- -	- -	3.00
4	Child sized moveable tables	6 (40)	8 (53.3)	1 (6.7)	2.33
5	Child sized shelves	11 (73.3)	4 (26.7)	- -	2.73

Weighted Average = 2.81

Low = 0 - 1.44 Average = 1.45 – 2.44 High = 2. 45 – 3

Table 3 shows that the extent of structural quality in terms of playground is high (WA = 2.83). The detailed analysis is as follows: Enough space to take 20-25 children to play at a time (mean = 2.87), the playground is safe and secured for children (mean = 2.93), not bushy (mean = 2.93), not waterlogged (mean = 3.00), free from dangerous objects (mean = 2.87), possesses adequate and developmentally appropriate play materials (mean = 2.40).

The table also shows that the extent of structural quality in terms of classroom is high (WA = 2.98). The detailed analysis is as follows: Recommended size (mean = 3.00), Recommended flooring (mean = 3.00), Roof (mean = 3.00), Walls (mean = 3.00), Illumination (mean = 3.00), door (mean = 3.00), Corners such as maths, literacy, science etc are neatly arranged (mean = 2.87).

The table also shows that the extent of structural quality in terms of furniture is high (mean = 2.81). The detailed analysis is as follows: Child sized chairs (mean = 3.00), Chalkboard, moveable or not (mean = 3.00), Colourful and moveable chairs (mean = 3.00), Child sized moveable tables (mean = 2.33), Child sized shelves (mean = 2.73).

Research Question 2: What is the extent of process qualities of ECE centres in Ilorin East Local Government Area of Kwara State in terms of:

a. Curriculum?
b. Teacher qualification?
c. Assessment?

Table 4: Extent of Process Qualities of ECE Centres in Ilorin East Local Government Area, Kwara State

S/N	CURRICULUM	AA	ANA	NA	MEAN
1	One year pre-primary school curriculum	8 (53.3)	2 (13.3)	5 (33.3)	2.20
2	0-5 years preschool curriculum	15 (100)	- -	- -	3.00
3	Scheme of work	15 (100)	- -	- -	3.00
4	Lesson plan	15 (100)	- -	- -	3.00
Weighted Average = 2.80					
	ASSESSMENT				
1	Teacher welcome feedback from the children	12 (80)	3 (20)	- -	2.80
2	Teacher observes diagnostic assessment before the lesson start	14 (93.3)	1 (6.7)	- -	2.93
3	Teacher observes formative assessment during the lesson	11 (73.3)	4 (26.7)	- -	2.73
4	Teacher observes summative assessment after the lesson	13 (86.7)	2 (13.3)	- -	2.86
5	Teacher observe the children on a daily basis	12 (80)	3 (20)	- -	2.80
6	Teacher assesses the children on intellectual, emotional, physical and social development	9 (60)	6 (40)	- -	2.60
7	Teacher assesses the children using authentic assessment	11 (73.3)	4 (26.7)	- -	2.73
Weighted Average = 2.78					
Low = 0 - 1.44		Average = 1.45 – 2.44		High = 2. 45 – 3	

Table 4 shows that the extent of process quality in terms of curriculum is high (WA = 2.80). The detailed analysis is as follows: One year pre-primary school curriculum (mean = 2.20), 0-5 years preschool curriculum (mean = 3.00), Scheme of work (mean = 3.00), Lesson plan (mean = 3.00),

Table 1 shows that the extent of process quality in terms of teacher qualification is low as there are only 7 teachers with recommended teaching qualification which accounted for 46.7% of

the sampled population while 8 teachers which accounted for 53.3% of the population are not qualified.

Table 4 also shows that the extent of process quality in terms of assessment is high (WA = 2.78). The detailed analysis is as follows: Teacher welcomes feedback from the children (mean = 2.80), Teacher observes diagnostic assessment before the lesson start (mean = 2.93), Teacher observes formative assessment during the lesson (mean = 2.73), Teacher observes formative assessment during the lesson (mean = 2.87), Teacher observe the children on a daily basis (mean = 2.80), Teacher assesses the children on intellectual, emotional, physical and social development (mean = 2.60), Teacher assesses the children using authentic assessment (mean = 2.73).

Research question 3: what is the numeracy performance of pre-schoolers in Ilorin East Local Government Area of Kwara State?

Table 5: Numeracy Performance of Pre-schoolers in Ilorin East Local Government Area

Actual Score	Aggregate	Frequency	%	Mean Score	Std.D	Remark
0-9	0-39%	0	0			Poor
10-13	40-59%	0	0			Fair
14-15	60-69%	2	5.8	21.72	1.0134	Good
16-22	70% and above	288	94.2			Excellent
Total	**100**	**290**	**100**			

Excellent/Very high (16 -22), Good/High (14-15), Fair/ Moderate (10-13), Poor/Low (0-9)

Table 5 shows that the numeracy performance of pre-schoolers in Ilorin east local government area of Kwara State is high (mean score = 21.72). The detailed analysis is as follows: only two children scored 14-15 rated good/high which accounted for 5.8% and 288 children scored 16-22 rated excellent/very high which accounted for 94.2% of the sampled population.

Testing the Hypotheses

The following two research hypotheses were raised and tested at 0.05 level of significant

Research Hypotheses One: There is no significant influence of structural qualities on pre-schoolers numeracy performance

Table 6: influence of Structural Qualities on Pre-schoolers Numeracy Performance

	Model	Sum of Squares	df	Mean Square	F	Sig
1	Regression	1.237	3	.412	.277	.841b
	Residual	16.363	11			
	Total	17.600	14			

R = 0.265,R2 = 0.070, Adj R2 = -0.183

a. Dependent Variable: Numeracy

b. Predictors: (Constant), furniture, classroom, playground

Table 6 shows that there is no significant influence of independent variable (structural quality) on the dependent variable (numeracy performance) (R = 0.265). This led to the fact that the structural quality accounted for 7% of the total variance in numeracy performance (Adjusted $R^2 = 0.18$). This composite influence is shown not to be significant ($F_{(3, 11)} = 0.277$; $p>0.05$).

Research Hypothesis Two: There is no significant influence of process qualities on pre-schoolers numeracy performance.

Table 6: influence of Structural Qualities on Pre-schoolers Numeracy Performance

	Model	Sum of Squares	df	Mean Square	F	Sig
1	Regression	7.216	3	2.405	2.548	.109b
	Residual	10.384	11			
	Total	17.600	14			

R = 0.640, R2 = 0.410, Adj R2 = -0.249

a. Dependent Variable: Numeracy

b. Predictors: (Constant), Teacher Qual, Assessment, Curriculum

Table 7 shows that there is no significant influence of independent variable (process quality) on the dependent variable (numeracy performance) (R = 0.64). This led to the fact that the process

quality accounted for 41% of the total variance in numeracy performance (Adjusted $R^2 = 0.25$). This composite influence is shown not to be significant ($F_{(3, 11)} = 2.55$; $p>0.05$).

Summary of Findings

1. The extent of structural quality of Early Childhood Centres in terms of playground is high
2. The extent of structural quality of Early Childhood Centres in terms of classroom is high
3. The extent of structural quality of Early Childhood Centres in terms of furniture is high
4. The extent of process quality of Early Childhood Centres in terms of curriculum is high
5. The extent of process quality of Early Childhood Centres in terms of teacher qualification is low
6. The extent of process quality of Early Childhood Centres in terms of assessment is high
7. The numeracy performance of pre-schoolers in Ilorin East LGA is high
8. There is no significant influence of structural qualities on pre-schoolers numeracy performance
9. There is no significant influence of process qualities on pre-schoolers numeracy performance

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter focuses on discussion, conclusion and recommendations of the study. The purpose of this study was to assess the influence of structural and process qualities on preschoolers' numeracy performance in early childhood education centres in Ilorin East Local Government Areas of Kwara State. Based on the discussions, conclusions were drawn and recommendations were also made while suggestions for further studies were made.

Discussions of Findings

The findings of the study as regards the influence of structural and process qualities on preschooler's numeracy performance in early childhood education centres in Ilorin East Local Government Areas of Kwara State are as follow. The findings of the study revealed that the extent of structural quality in terms of playground is high in early childhood education centres in Ilorin East Local Government Areas of Kwara State. This finding is in agreement with Yahaya, (2019) who investigated the influence of physical environment on early childhood education classroom management and found out that physical environment influenced early childhood education classroom management. This disagrees with the study conducted by Mohammed, (2019) in his research on structure quality as correlate of pupils cognitive development and the result revealed that there was negative relationship between structure quality and pupils cognitive development.

The findings of the study also revealed that the extent of structural quality in terms of classroom was high in Ilorin East Local Government Area of Kwara State. The finding is supported by a similar study carried out by Sahin, et'al (2011), who researched on the influence of the physical environment on early childhood education classroom management and found out that many of the teachers agreed that movement area and class size were the most significant points since they affects other areas of classroom management. In this study teachers said that fewer students larger movement areas increase teachers' enthusiasm and satisfaction, positively affect teachers-students interaction and enhance the pupils ability to maintain attention to and involvement in learning activities. This disagrees with the study conducted by John, (2016). In

his research on classroom size as determinant of pupils' academic performance and the study revealed that there was a negative relationship between classroom size and pupils academic performance.

The findings also revealed that the extent of structural quality in terms of furniture was high in Ilorin East Local Government Areas of Kwara State. it is evident that furniture is very vital for teaching and learning. The result of this study agreed with Midred, (2017) who carried out study on influence of learning facilities on provision of quality education in early childhood department in Kenya and the result revealed that there was significant relationship ($p<0.01$) between learning facilities and provision of quality early childhood development education. The findings also revealed that the extent of process quality in terms of curriculum was high, it shows that the curriculum for the school programs is of quality in Ilorin East Local Government Area Kwara State. The finding is not in line with Syed, (2013) who carried out study on Student teachers' perceptions about the curriculum content: A case of a normal university in China and findings revealed that curriculum was not according to the students' level of maturity. The majority of the student teachers responded that the content was not compatible with their level of interest

The findings also revealed that the extent of process quality in terms of teacher qualification was low, the outcome revealed that quality process for teachers' qualification was not done during the recruitment process. This finding with the findings of Owolabi (2012) who carried out study on Effect of Teachers' Qualification on the Performance of basic primary School pupils: Implication on Technology in Nigeria and the results revealed that students taught by teachers with higher qualifications performed better than those taught by teachers with lower qualifications This is also not in agreement with Olarewaju (2016) who submitted that students' low performance in Physics is due to the teachers' ignorant. In another development, Adeniyi (2013) also supported the findings when he observed that the manpower development is a function of qualified teachers.

The findings also revealed that the extent of process quality in terms of assessment is high. The finding is supported by Mariam, (2018) who carried out study on the attitude of pre-primary school teachers' towards dynamic assessment and study revealed that teachers had positive attitude towards dynamic assessment of children's learning. This figure indicates that they were interested in supporting their learners. This collaborates with the report of Jorge (2012) in Spain who found out that robust evidence of the positive impact of dynamic assessment on all indices of academic outcomes was considered. In addition, responses to a self-report questionnaire revealed that dynamic assessment improved students' satisfaction and was perceived by students as a procedure that promotes deeper learning.

The findings also revealed that there is no significant influence of structural qualities on pre-schoolers numeracy performance in Ilorin east local government area of kwara state. This result is consistent with the findings of Yahaya, (2019) who carried out study on the influence of physical environment on early childhood education classroom management and the result revealed that there is no significant influence of physical environment on early childhood classroom management based on teachers' qualification. More so, the findings also revealed that there is no significant influence of process qualities on pre-schoolers numeracy performance in Ilorin East Local Government Area of Kwara State, therefore the hypothesis is not rejected. The result is in line with (Aremu,2008) who investigated on the effect of visual instructional materials on pupils' academic performance in numeracy and findings was revealed that there is no significant effect of school type on pupils' academic performance in numeracy.

Conclusion

This study investigated the influence of structural and process qualities on preschoolers numeracy performance in early childhood education centres in Ilorin East Local Government Area of Kwara State. Based on the findings of the study, it can be established that the extent of structural quality in terms of playground is high and the extent of structural quality in terms of classroom is high, the extent of structural quality in terms of furniture is high as well, more so, the extent of process quality in terms of curriculum is high and the extent of process quality in terms of teacher qualification is low. It can also be concluded that structural and process qualities have no significant influence on preschooler numeracy performance. It was also established that irrespective of availability or non -availability of structural or process qualities, children that are gifted or talented still do well in their subject areas. It was also established that, some children still fails despite high level of structural and process qualities at their disposal. It was also established that, in some cases good level of structural and process qualities contributed to the good performance in some children.

Recommendations

Based on the findings of the study, the following recommendations were made:

1) Public and private preschools operators should earmark fund for training and retraining of teachers already employed in pre-primary education.
2) Public and Private ECE Centres operators should ensure subsequent employments recommends only qualified and professional teachers to teach in pre-schools.
3) Since structural and process qualities have little or no influence on children academic performance, school operators should be mindful of children with special educational needs and also encourage children perception and interest in teaching and learning activities.
4) Government and private operators of preschools should ensure continuous workshops, seminars and trainings for teachers professional upgrading.
5) Government and private preschools operators should strive to maintain standards or even improve on existing standards..

6) Public and private preschool operators scholarship opportunities available for already employed preschool teachers for professional courses

Limitation of the Study

The findings of this study were limited in the following areas. This study is limited to only one Local Government Area in the State out of the Sixteen Local Government Area of Kwara State. If the study captured more Local Government Areas, the findings may be more comprehensive and can easily be generalised. Also moderating factors like school type and gender were not taken into consideration. More so, this study only researched on numeracy performance neglecting other aspect of academic performance like; literacy, social habit, science etc.

Suggestion for Further Studies

The following suggestions were made for further research based on the limitation of the study

1. Other researchers for similar study should look beyond one Local Government for purpose of robust outcomes and generalization.
2. In furtherance to determining the structure of structural and process qualities on preschoolers numeracy performance, moderating variables like school type and gender should be introduced.
3. Future research work on the influence of structural and process qualities on academic performance should look at other areas aside from numeracy like literacy, social habit, science etc.
4. The study can also be replicated in rural or urban Area, or rural and urban as this study only focus on primary schools in urban areas.
5. Future researchers can also increase the number of schools to be more than 15.

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APPENDICES

APPENDIX 1

KWARA STATE UNIVERSITY, MALETE
FACULTY OF EDUCATION
DEPARTMENT OF EARLY CHILDHOOD AND PRIMARY EDUCATION

Dear respondents,

The rating scale is design to gather data on influence of structural and process qualities on preschooler's numeracy performance in early childhood education centres in Ilorin East Local Government Area, Kwara State as part of my requirement for my master degree in the department of early childhood and primary education Ilorin East Local Government Area in

Kwara State University. All information provided shall be treated with utmost confidentiality and used only for the purpose of this research.

Emmanuel EKURE ……..
Sign/Date

APPENDIX II

PRESCHOOL STRUCTURAL QUALITY RATING SCALE (PSQRS)

These are instruments designed and used for rating of structural qualities in ECE centres used in this study.

Playground

S/N	ITEMS	AA	ANA	NA

1	Enough space to take 20-25 children to play at a time			
2	The playground is safe and secured for children			
3	Not bushy			
4	Not waterlogged			
5	Free from dangerous objects			
6	Possesses adequate and developmentally appropriate play materials			

Available and Appropriate (AA), Available Not Appropriate (ANA), Not Appropriate (NA)

Classrooms

S/N	ITEMS	AA	ANA	NA
1	Recommended Size (16 square meters) for 20-25 children			
2	Recommended Flooring – Smooth but not slippery, plastered with cements			
3	Roof – Corrugated iron sheet, thatch, raffia etc. (not leaking)			
4	Walls – Cement blocks, bricks, mud, raffia, bamboo, etc.			
5	Illumination – Well illuminated (children able to see clearly in every part of the room).			
6	Door – wooden or iron that can be locked.			
7	Corners such as maths, literacy, science etc are neatly arranged			

Available and Appropriate (AA), Available Not Appropriate (ANA), Not Appropriate (NA)

Furniture

S/N	ITEMS	AA	ANA	NA
1	Child sized chairs (one per child) and one round table per 4 children			
2	Chalkboard, moveable or not			
3	Colourful and moveable chairs			
4	Child sized moveable tables			
5	Child sized shelves			

Available and Appropriate (AA), Available Not Appropriate (ANA), Not Appropriate (NA)

APPENDIX III

PRESCHOOL PROCESS QUALITY RATING SCALE (PPQRS)

The pre-schoolers process qualities rating scales (PPQRS) are instruments designed and used for collection of data of process qualities variables involved in this study.

Demographic Data of the Respondents

Instruction: Please tick ( ) the option that are present below based on your personal information

Teacher Qualification: NCE ( ), B.ED ( ), PGDE ( ), M.ED ( ),

OTHERS ( )

Year of experience: 0 – 5 years ( ), 6 - 10years ( ), 11 – 15years ( ), 16 – 20years ( ), 21years and above

Preschool Curriculum

S/N	ITEMS	AA	ANA	NA
1	One year pre-primary school curriculum			
2	0-5 years preschool curriculum			
3	Scheme of work			
4	Lesson plan			

Assessment Methods

S/N	ITEMS	Always	Sometimes	Never
	Assessment Method			
1	Teacher welcomes feedback from the children			
2	Teacher observes diagnostic assessment before the lesson start			

3	Teacher observes formative assessment during the lesson			
4	Teacher observes summative assessment after the lesson			
5	Teacher observe the children on a daily basis			
6	Teacher assesses the children on intellectual, emotional, physical and social development			
7	Teacher assesse the children using authentic assessment			

APPENDIX IV

CHILDREN NUMERACY PERFORMANCE SCALE (CNPS)

The children numeracy performance scales were designed and used to access children numeracy performance in this study.

Match these Numbers with Objects

Objects **Numbers**

Examples ☐ ☐ → 2

1)  5

2)  3

3)  2

4)  4

5)  1

6) Write Numbers 1 to 10 in ascending order

7) Add these Numbers and images

2 + 2 =

8)

5 – 3 =

9)

 +  =

10) Fill in the blank spaces

10	**9**	**8**		**6**
	4		**2**	

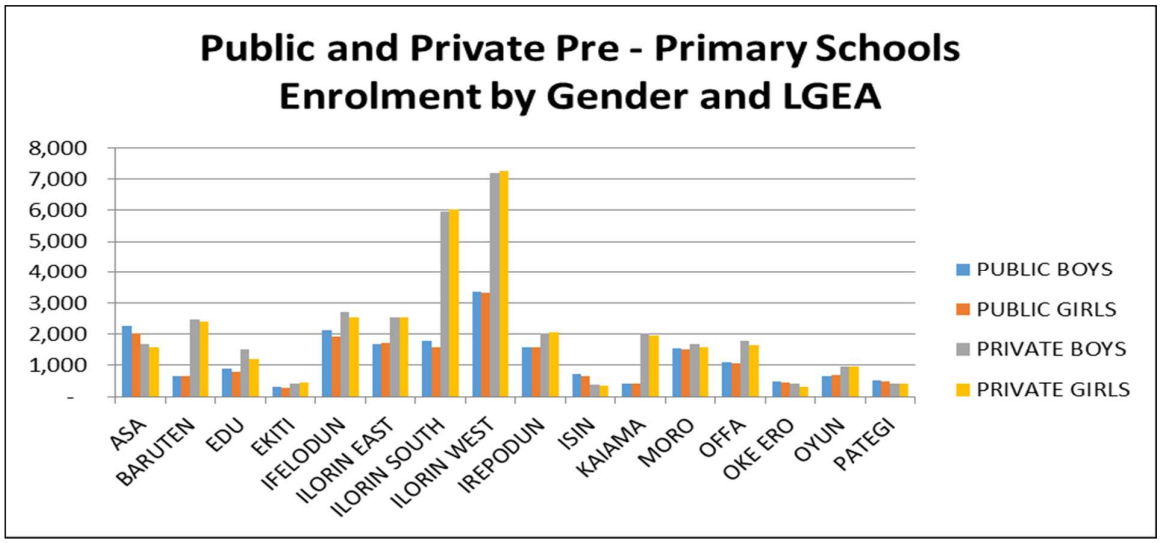
APPENDIX V

Table 3.3: Public and Private Pre-Primary Schools Enrolment by Gender and LGEA

LGA	Public				Private			
	Number of Schools	Pupils	Girls	% girls	Number of Schools	Pupils	Girls	% girls
ASA	140	4,291	2,030	47%	65	3,243	1,577	49%
BARUTEN	33	1,290	639	50%	58	4,872	2,414	50%
EDU	36	1,703	805	47%	34	2,697	1,189	44%
EKITI	34	599	292	49%	17	869	439	51%
IFELODUN	91	4,062	1,922	47%	45	5,266	2,546	48%
ILORIN EAST	68	3,397	1,710	50%	84	5,067	2,527	50%
ILORIN SOUTH	59	3,359	1,579	47%	269	11,993	6,036	50%
ILORIN WEST	61	6,696	3,333	50%	266	14,443	7,258	50%
IREPODUN	78	3,143	1,572	50%	67	4,085	2,058	50%
ISIN	45	1,378	643	47%	13	729	359	49%
KAIAMA	15	859	431	50%	36	3,998	1,958	49%
MORO	81	3,067	1,527	50%	44	3,273	1,592	49%
OFFA	44	2,165	1,075	50%	60	3,456	1,665	48%
OKE ERO	30	947	462	49%	13	723	319	44%
OYUN	60	1,362	692	51%	34	1,939	973	50%
PATEGI	24	1,008	490	49%	8	853	432	51%
TOTAL	**899**	**39,326**	**19,202**	**49%**	**1,113**	**67,506**	**33,342**	**49%**

Table3.3 shows the status of pupils' enrolment in public and private pre-primary education by gender and LGEA.

Figure 3.1: Graphical Representation of Public and Private Pre –Primary Schools Enrolment by Gender and LGEA.



Kwara State School Census Report, 2018-2019

APPENDIX VI

NIGERIAN EDUCATIONAL RESEARCH AND DEVELOPMENT COUNCIL (NERDC).

NATIONAL MINIMUM STANDARDS FOR EARLY CHILD CARE CENTRES IN NIGERIA

unicef

ISBN978-054-300-7

OWNERSHIP:

Private, Community or Government.

STEPS IN STARTING A CENTRE:

- Familiarization with requirements of establishing standard ECC

Centres from the relevant department (Education/Women Affairs/ Health).

- Filing of Application.
- Screening by designated authority (site, personnel, infrastructure, funding/ management arrangements etc.)
- Licensing.

CHARACTERISTICS OF AN EFFECTIVE CENTRE

Playground:

- Enough space for children to play (enough to take20-25 children and two adults at a given time.
- Safe and secured.
- May have grass or sand but not bushy or dirty.
- Not water logged.
- Free from dangerous objects.

Fencing:

- Facility should be fenced in a manner that prevents outside interference such as rampaging animals, and prevent children from straying outside.
- Fence done with concrete, mud, bamboo, raffia, corn stalk, wood, flowers hedge, plants.

Office Accommodation:

- Safe secured space to be provided for safety of school records and materials.

CAVIES FOR CLOSURE OF A CENTRE:

- Persistent failure to meet core standards – particularly relating to issues such as safety, health, and child abuse.

CLASSROOM:

There should be solid structures that will not collapse. Generally the building should not pose danger to children.

Size: Enough Space. The classroom (16 square meters) for20-25children. To be well ventilated with at least two doors. Design should allow for free movement. Sitting arrangements should not be rigid like informal school setting but flexible and allow for plan and interaction with other children.

Flooring of the classroom – Smooth but not slippery (has to be plastered with cement or with local material excluding cow dung and such harmful materials).

Roof: Corrugated iron sheet. Thatch raffia etc.(not leaking).

Ceiling: Modern ceiling boards, raffia, bamboo, wood, mats, thick cartons etc.(not asbestos ceiling boards).

Walls: Cement blocks, bricks, mud, raffia, bamboo etc.

Illumination: Well illuminated (children able to see clearly in every part of the room).

Door: Wooden or iron that can be locked.

Corners: for science, health and nutrition, drama, shopping, sleeping.

RECORDS:

- Admission and withdrawal register.
- Child folder containing biodata, health records, etc.
- Attendance registers.
- Log Book (incidences/occurrences).
- Teachers' record book.
- Visitors' book
- Time book(sign in and out note)
- Movement books for both teachers and children
- Continuous assessment/tests records
- Personnel records
- PTA minutes book
- Ledger
- Inventory of school/property
- Staff meeting minutes book

- School diary

FURNITURE:

- Child-sized chair(one per child)and one round table per 4 children.
- Mats, locally made beds, mattresses covered with Macintosh and Bed sheets.
- Chalkboard/classroom(movable or fixed).
- Gender-neutral IEC charts/posters/pictures. Children's work should be on the wall.
- Cupboards, shelves, for children items (enough to hold 25 children's items e.g. water bottles, food, bags).
- Care giver table and chair.
- Display table or shelf.
- Wall clock.

PARENTAL/COMMUNITY INVOLVEMENT

- Regular interactive visits by parents to the centre
- Follow up on children's performance
- Provision of meals while at the centre
- Participation at PTA
- Material/monetary resource contributions
- Provision of special services
- ECD should be part of school development plan articulated by the School Based Management Committee (SBMC).

GOVERNMENT INVOLVEMENT

- Licensing
- Supervision/monitoring(quality control)
- Training of suitably qualified personnel
- Provision of infrastructure, personnel, and gender-fair instructional materials for government/ community owned centres etc.