

**THE ROLE OF INDIGENOUS GAMES IN ENHANCING EARLY LEARNING  
AMONG PRESCHOOL CHILDREN IN CHIBOMBO DISTRICT, CENTRAL  
PROVINCE, ZAMBIA**

By

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## **DECLARATION**

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**“THE ROLE OF INDIGENOUS GAMES IN ENHANCING EARLY LEARNING AMONG PRESCHOOL CHILDREN IN CHIBOMBO DISTRICT, CENTRAL PROVINCE, ZAMBIA”**

I declare that this thesis, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution.



**SIGNATURE**

19<sup>th</sup> February 2024

**DATE**

## **DEDICATION**

I dedicate this thesis to the following:

### **My dear wife, Merab Nakamba**

For your prayers, unconditional support, love and patience throughout this academic journey.

### **My lovely daughters, Chongo and Chomba**

For your untiring support and patience, including your understanding when I was unavailable many times when you needed my presence. You are rock stars.

### **Most importantly, my mother**

For believing in education as an equaliser for all regardless of socio-economic status or background.

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## **ABSTRACT**

Indigenous games have been used to promote learning globally. Scholars have shown that traditional games are vital for a smooth learning process for all learners including those from low-income communities for them to have equal access to quality Early Childhood Education (ECE). This study sought to determine the role of indigenous games in promoting early learning among preschool children in Chibombo District, Central Province, Zambia. The study was anchored on indigenous knowledge systems (IKS), Jean Piaget's theory of play and Lev Vygotsky's sociocultural theory. A qualitative research approach using participatory action research (PAR) through an interpretivist paradigm and critical theory was used to gather data from ten teachers in four purposively selected schools in Chibombo District through individual interviews, focus group discussions, participant observations and document analysis. Data was transcribed and analysed thematically using ATLAS.ti 23 to generate codes and themes. Four themes emerged: indigenous games preschool teachers use in teaching emergent literacy and numeracy skills; indigenous games as a pedagogical approach for teaching emergent literacy and numeracy skills; challenges teachers face when using indigenous games in teaching; and intervention measures teachers can use to deal with challenges faced. The findings confirmed earlier studies that learners found traditional games enjoyable, inexpensive and fun than Eurocentric games that are unfamiliar and expensive. Traditional games were found to support preschool learners in exploring fundamental concepts in emergent literacy and numeracy. The implication of this study to theory and practice shows that preschool learners learn better when teachers work as scaffolders in teaching using culture, social experiences, zone of proximal development (ZPD) and imitation of learners from adults. The study recommends that the ECE curriculum incorporates the indigenous games that are appropriate for ECE practice such as CPDs and workshops. As such, a 6-step framework to support holistic child development has been suggested in this study. In conclusion, the study has shown that indigenous games are vital in supporting early learning in preschools.

**Key words:** Early childhood education, indigenous knowledge systems, indigenous games, traditional games, play-based learning, creative approach, early learning, learning through play, preschool teachers, preschool, low-income communities.

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## **ACRONYMS AND ABBREVIATIONS**

ECD	Early Childhood Development
ECE	Early Childhood Education
CHAU	Chalimbana University
IKS	Indigenous Knowledge Systems
MOE	Ministry of Education
MOGE	Ministry of General Education
PAR	Participatory Action Research
UNICEF	United Nations Children's Fund
UNISA	University of South Africa
VVOB	Education for Development (translated in English)

## CHAPTER 1 INTRODUCTION AND BACKGROUND

### 1.1 INTRODUCTION AND BACKGROUND OF THE STUDY

Games have been used to promote learning in schools and communities in many societies across the globe for a long time (Ejuu, 2017; Grindheim, 2021; Matafwali & Mofu, 2023; Moloji, 2020; Smith, 2017). Scholars have shown the importance of games, by indicating that children must be active participants in their day-to-day learning process, which should occur both indoors and outdoors (Grindheim, 2021). This study is situated within indigenous knowledge systems (IKS) (Kinzel, 2020; Moloji, 2020; Ng'asike & Swadener, 2019), Jean Piaget's theory of play (Lindon & Brodie, 2016; Nilsson & Ferholt, 2014), and Lev Vygotsky's sociocultural theory (Bodrova & Leong, 2015; Vygotsky, 2016), which posit that play allows children to use traditional knowledge, construct new knowledge through play activities, and interact with peers and adults. This study argues that activities or games for children in play should be indigenous to a specific community or preschool and should be known by the teachers as well as their learners for better learning outcomes.

Studies conducted in Nigeria (Ukala & Agabi, 2017) and Ghana (Acharibasam & McVittie, 2020) have shown how early childhood indigenous education fosters child development, as children learn from adults who are experienced in a particular craft, using IKS and linking these experiences to modern classrooms, which use Eurocentric approaches. Scholars argue that benefits can be derived if the two education systems (Eurocentric knowledge systems and IKS) are properly harmonised, by tapping the benefits of each system and including them in the school curriculum (Munsaka & Kalinde, 2017; Moloji, Mosia, Matabane & Sibaya, 2021). It is therefore important to seriously consider Madondo and Tsikira's (2022) study, which has demonstrated the richness of traditional children's games as an instructional tool for promoting holistic child development at early childhood education, or preschool, level in rural Zimbabwe. This is confirmed by Tachie and Galawe (2021), who suggest that incorporating games in teaching and learning mathematical word problems significantly improves learners' creativity and imagination needed to solve classroom and life challenges. In Kenya, and indeed in East Africa, children learning by doing, playing games such as *jela ndogo* (small jail) and many others, which



involve counting, sequencing, drawing, measuring, and precision in decision-making, was seen as essential in promoting literacy and numeracy development in preschool learners at an early age (Ng'asike & Swadener, 2019).

Until recently, Early Childhood Education (ECE), or preschool, in Zambia has largely been for a select few children from families that can afford private education, which is Eurocentric in nature (Lungu & Matafwali, 2020). Since 2014, the Ministry of Education has annexed ECE to primary schools and has made it compulsory for all children (Munsaka & Kalinde, 2017). The pedagogical approaches in both public and private schools, however, have remained largely didactic (Munsaka & Kalinde, 2017).

Zambian education reforms in ECE emphasise the need to (1) use playful pedagogy rather than conventional methods of teaching, (2) support holistic child development through expressive, creative and playful use of songs, dances and stories, and (3) use locally available and affordable teaching materials and equipment (Munsaka & Kalinde, 2017). However, scholarly evidence suggests that the practice in both public and private schools is far from what the reforms envisage (Lungu & Matafwali, 2020; Munsaka & Kalinde, 2017; Mwanza-Kabaghe, Mubanga, Matafwali, Kasonde-Ngandu & Bus, 2015).

Considering the importance of literacy and numeracy skills in children's future educational prospects and achievements, it is imperative that the most effective methods that are familiar to preschool learners are adopted for use in schools. In view of this, it is vital to ascertain the role that indigenous games can play in enhancing learning in the early years, resulting in children acquiring literacy and numeracy skills before entering Grade 1. This study therefore advocated for pedagogical approaches that would use indigenous games to support successful implementation of playful ECE in Zambian schools.

## **1.2 RATIONALE OF THE STUDY**

In my years of experience as a teacher trainer, I have observed teachers in ECE centres who are unable to use indigenous games but find it easy to use modern Eurocentric or Western play and teaching materials or approaches in their teaching.

In my assessment, the use of Eurocentric materials and approaches is unsustainable, expensive and alien to most public rural schools, whose children grow up playing indigenous games, as shown by Madondo and Tsikira (2022) and Matafwali and Mofu (2023).

In my conversations with ECE teachers, they generally allude to the lack of appropriate teaching and learning materials, and where materials *were* available, they tended to be Eurocentric. I have observed little or no innovation about the need to be creative and integrate indigenous games into their teaching strategies. Worse still, I have observed, as have other scholars (Hunter & Hunter, 2018; Moloji et al., 2021), a decline in the use of indigenous games in schools, due to increasing westernisation and the use of technology for teaching and learning, as well as recreation, even at preschool level. The need for integration of indigenous games into the formal preschool curriculum remains vital, especially for rural schools, which have difficulty acquiring Eurocentric teaching materials, which are unaffordable and unfamiliar to children in such communities (Madondo & Tsikira, 2022).

It is therefore imperative that educators integrate indigenous games into classroom instruction and use familiar teaching strategies that will resonate with their learners, to improve literacy and numeracy skills. Regrettably, the education system in Zambia has for a long time embraced Western philosophies, which undermine the resourcefulness of indigenous knowledge (games) in accessing quality ECE (Munsaka & Kalinde, 2017). The potential and the relevance of indigenous games in enhancing ECE in Africa has remained unclear and under-researched (Ogunyemi & Henning, 2020). Studies that have been conducted on indigenous knowledge systems in Zambia, portray a limited focus on the use of IKS in ECE and how it can be used to enhance learners acquire emergent literacy and numeracy skills (Banda & Banda, 2016; Kalinde, 2016; Lungu, Matafwali & Banja, 2021). I have not come across any innovation in generating or mobilising knowledge on indigenous games and on how this supports or enhances early learning in Zambian preschools, especially for the acquisition of literacy and numeracy skills.

In this study, I sought to determine the influence that indigenous games have on preschool learners' ability to acquire literacy and numeracy skills. After determining

the influence that indigenous games have on learning, I proposed a teaching/learning framework that can be used enhance learners' emergent literacy and numeracy acquisition. This helped to incorporate indigenous knowledge into formal ECE practice in Zambia for all learners, regardless of their locality and/or socio-economic status and/or vulnerability.

### **1.3 PRELIMINARY LITERATURE REVIEW**

This section highlights areas of interest and concern to indigenous games in ECE by providing a preliminary literature review. It begins by contextualising play and learning in ECE and connecting it to outdoor activities that teachers and learners engage in during lessons. It also discusses social creativity, which is essential for discussing indigenous games and the role they play in enhancing learning in preschool learners.

#### **1.3.1 Contextualising play and learning in ECE**

Play in ECE is a very broad topic, which continues to generate serious discussion and debate (Ogunyemi & Henning, 2020; Sørensen, 2021). The concept of play has been topical for a long time. "Play is the business of childhood" and "Play is the child's way of learning" are statements that are still heard, but they are becoming less convincing (Selmi, Gallagher & Mora-Flores, 2015). Using this concept often encourages those who are opposed to play in education to dismiss it on the grounds that the idea seems too broad and vague to be a valid and useful basis for teaching and learning.

Although play in the history of ECE has been viewed favourably as a foundation for learning (Froebel, 1896; Pestalozzi, 1915; Piaget, 1970; Vygotsky, 1978), there have always been critics who have advocated for more structured and direct instruction for children, regardless of their age (Johnson, Adkins & Chauvin, 2020). Recently, however, the debate has intensified in the context of education, influenced by early learning standards and assessment of academic achievement (Grindheim, 2021). There is concern that play is being used less and less in ECE, and that a vigorous response is needed to protect the important role that it plays (Sørensen, 2021). In view of this, it is vital to emphasise the views of scholars on African education, such as Matafwali and Mofu (2023), Madondo and Tsikira (2022), Moloji (2020) and

Serpell (2020), who advocate for teaching children in Africa using an indigenous lens, which will protect indigenous knowledge in its own context.

In Africa, the context within which child development and early learning are theorised remains closely linked to the society and the community in which a child grows up (Serpell, 2019). From birth, children are socialised into a wider family and community environment, which trains them in various skills, from walking and talking to handling simple tasks, until they are of age to perform more complex tasks (Ogunyemi & Henning, 2020). As children engage in simple tasks, play takes place alongside the assigned activities (Wadende, Oburu & Morara, 2016). Wadende et al. (2016, p. 3) show how “sociocultural constructions segregate male from female learners” in the use of “indigenous play items and games”, as boys learn how to tend cattle, hunt and milk cows, alongside playing with older male siblings, and sometimes male adults. By contrast, girls are engaged in “more domestic chores”, which involve tasks performed at home, or those that their older female siblings do together with their mothers. At an appropriate time, each day, children in the community gather in one place to play various games, such as *chiyato*, which is commonly played by girls in Zambia for fun and leisure (Munsaka & Kalinde, 2017). These children do not realise that they are learning mathematical concepts in various activities that are indigenous to their communities (Moloi, 2020).

Several researchers in sub-Saharan Africa have provided convincing reasons for teaching using playful pedagogy that uses indigenous games or knowledge in the early years of learning (Lungu & Matafwali, 2020; Madondo & Tsikira, 2022; Serpell, 2020; Wadende et al., 2016; Wirdze, 2021). Although Wadende et al. (2016) argue that both indigenous and modern-day ECE practice are participatory in nature, it is Hedegaard’s (2020) view that certain aspects of modern-day developmentally appropriate practice are unfamiliar to learners, as they are new to their culture and learners are only exposed to them when they enroll in school. It is for this reason that what should constitute an appropriate early learning and teaching approach should be carefully considered for a community, especially for rural and vulnerable children (Madondo & Tsikira, 2022).

Limonya (2020) adds value to this discourse with the argument that education and cultural knowledge are inextricably linked. The reason is that the content of education has value underpinnings, and it is associated with a culture (Madondo & Tsikira, 2022). Therefore, teaching and learning that infuses a child's cultural knowledge into the curriculum has the potential to enhance innovative constructivist thinking in learners. As expounded by Vygotsky's (2016) sociocultural theory, learning is determined by the context in which children learn, their social and cultural experiences, and the way in which adults and other children, tools and resources support learning. Based on Vygotsky's theory, introducing games that are alien to children's physical and social environment can reduce their opportunity to maximise learning (Wadende et al., 2016). It is therefore important that the indigenous games that children are familiar with from their home are applied and used in schools to promote coherent learning, while other teaching approaches can be incorporated later. Based on Vygotsky's construct of the zone of proximal development (ZPD), cognitive development stems from social interactions of guided learning as children and their play partners co-construct knowledge through play (Nilsson & Ferholt, 2014).

In an attempt to investigate indigenous play and learning among the Turkana, a pastoralist community in Kenya, Ng'asike and Swadener (2015) observed that as children engage in imaginary play with objects such as balls of camel dung, cooking utensils or stones, the objects are not only used as materials for play, but are also assigned meanings, enabling the children to engage in higher-order mental processes based on signs and language as mental tools. The author concludes that Turkana children's play can inform educators' thinking about appropriate pedagogy for African ECE. This is supported by Nxumalo and Mncube (2019) who investigated the use of indigenous games and knowledge to decolonise the school curriculum and refocus it on the philosophy of Ubuntu. The authors concluded that the use of the philosophy of Ubuntu in the school curriculum stimulates critical thinking and creativity and promotes collective rules in learners.

Zambian scholars have attempted to study the role of indigenous music, games and play in promoting social, physical, emotional and cognitive skills in preschool learners (Kalinde, 2016; Lungu & Matafwali, 2020). Kalinde (2016), for example,

endeavoured to look at music and play activities as processes through which children gained knowledge and skills necessary for learning purposes, as theorised by Piaget (1962) and Vygotsky (1978). Kalinde's (2016) study looked at play as "a gateway to children's acquisition of a complex range of social, linguistic, cognitive, and ethical functions that are valued in adult life". The study found that the decline, or indeed the absence, of indigenous games and play in most school curricula impacts the ability of learners to acquire indigenous knowledge, traditions and life coping strategies. Although the study was conducted on ECE learners and teachers, it was an urban study and did not sample rural children, who have no access to modern technology and the Eurocentric teaching and learning approaches used in Zambia's capital, Lusaka.

In a study conducted in Lusaka, Mwanza-Kabaghe et al. (2015) found that only 1 out of the 20 selected schools had implemented ECE, as prescribed by the Ministry of General Education, in the curriculum and the syllabus. This is because the methods of teaching remained largely didactic, with very little play involved. ECE refers to a system of education and care for young children from birth to age 8 by people other than family members in settings outside of the child's home, classrooms and daycare centres (Follari, 2015; Lungu & Matafwali, 2020). This cohort of learners is arguably the most active cohort of learners, and, as such, it needs more playful activities than didactic ones in its learning environment (Mwanza-Kabaghe et al., 2015).

Studies show that there is significant academic and cognitive development in children who are exposed to play at an early age compared to those who are not. It is important to investigate whether indigenous games can add even more value to the acquisition of literacy and numeracy skills, especially for rural learners, due to their locality. This is even more important for modern-day preschools, which are increasingly discarding the idea of play using indigenous play or games in teaching and learning, in favour of Eurocentric approaches, which are alien and unfamiliar to rural, poor and vulnerable children.

#### *1.3.1.1 Outdoor play*

The benefits of outdoor play for children's physical, cognitive and social-emotional development cannot be overemphasised. Children who spend their time outdoors

show superior gross motor skills, longer concentration spans, and better language and collaborative skills (Grindheim, 2021). According to Ogunyemi and Henning (2020), play helps children develop a sense of community and engage in various activities that are familiar to them. Play is more than the time children use to pass time (Wirdze, 2021). Sørensen (2021) highlighted the value of playing outdoors. She noted that when playing outdoors, children experience the world, and they can engage in activities such as shouting, running, climbing and jumping. Being outdoors also improves children's attention levels (Grindheim, 2021). Hedegaard (2020) emphasises that the activities given to children outdoors should be stimulating and enjoyable in a welcoming environment. Kindergarten, or preschool, surroundings should be natural, with few artificial play items, to add value to outdoor play (Grindheim, 2021). Sørensen (2021) explains that greening the school grounds makes children more active and increases their repertoires; green school grounds invite children to jump, climb, dig and lift.

#### *1.3.1.2 Social creativity*

Social creative play does not require expensive and fancy materials to flourish. Even in poor communities and societies, creative play can still take place with very few materials available for use, such as indigenous games. A study in rural Zimbabwe found that even the poorest communities had children who were able to creatively play with the few materials available (Madondo & Tsikira, 2022). Children are born with creative potential. They observe the world and react to it using their imagination, and they enhance their creative play from within the environment (Tachie & Galawe, 2021). This is why children need to develop a relationship with nature and culture, to shape small worlds of their own, thereby enriching their imagination. Several research studies support the value of play for learning and development across different domains during the early years (Grindheim, 2021; Lungu et al., 2021; Madondo & Tsikira, 2022). An important challenge in ECE curriculum and instruction is to create appropriate and effective ways to harness the potential of play in the design of programmes and activities that will incorporate indigenous games to enhance early learning.

### **1.3.2 Indigenous games**

Indigenous games have been acknowledged as having educational benefits that can be linked to existing curricula in order to derive maximum benefit for learners in preschools (Acharibasam & McVittie, 2020; Kinzel, 2020; Moloji et al., 2021; Ukala & Agabi, 2017). According to Madondo and Tsikira (2022), indigenous games are relevant tools that help in teaching educational concepts that are beneficial for learning in preschool learners. It has been noted that games and play are culturally formulated, and that, as such, cultural activities and play are indigenous ways of learning the school curriculum, which help relate subject matter to the learners (Serpell, 2020). Without a doubt, indigenous play and games have educational benefits for ECE learners, regardless of the type of school they attend, or indeed their socio-economic status.

A study by Ogunyemi and Henning (2020) assessed the value of play in African childhood education. It used documentary analysis and surveys to capture the views of South African and Nigerian early childhood educators on the subject. The findings revealed that when African traditional play is used properly, it can enhance children's physical, mental, social and emotional development. The findings concur with those of other scholars, such as Moloji et al. (2021), who found that indigenous games can enhance the learning of mathematical concepts in children at an early age. This is supported by Madondo and Tsikira (2022), who applied similar approaches to children in rural Zimbabwe and found positive results with regards to the learning trajectory of children using indigenous games.

Studies conducted in Zambia have revealed that as children engage in games and play that focus on society's values and norms, they develop a sense of social responsibility and social intelligence (Kalinde, 2016; Lungu & Matafwali, 2020; Munsaka & Kalinde, 2017; Serpell, 2020). Lungu and Matafwali (2020b) reported the following as common play and games in Zambia: songs, poetry and narratives; games, play and dances; throwing and hitting games; seeking games; guessing games; daring games; acting and role-playing games; dancing and singing games; and language games. Kalinde (2016) shows how, if well applied, local songs and dances can promote early learning in preschool children in Zambia and can assist in



the acquisition of cognitive skills in learners. However, studies on games in Zambia have not endeavoured to determine specific literacy and numeracy skills that a particular indigenous game promotes. For this reason, this study investigated the role that indigenous games play in enhancing early learning, such as the acquisition of specific literacy and numeracy skills, in children in Chibombo District, Central Province, Zambia.

#### **1.4 STATEMENT OF THE PROBLEM**

Play forms a noteworthy part of children's daily experiences, and it shapes their physical, cognitive, emotional and social development. According to Ogunyemi and Henning (2020), play is a vital element that promotes people's culture and education across generations. Unfortunately, the education system in Zambia is inclined towards Eurocentric philosophies, which undermine the ingenuity of indigenous knowledge that is embedded in indigenous games in order to enable learners to access quality ECE (Munsaka & Kalinde, 2017). Arguably, the potential and the significance of indigenous games in enhancing early learning in Zambia has remained unclear and under-researched.

The paucity of specific research on the influence that indigenous games have on early learning among children in Zambia has created a knowledge gap in ECE, as teachers and practitioners struggle to reorient content and pedagogy. Many children are therefore marginalised from equal access to quality education in the initial stage of their development. The Eurocentric play materials that are used in modern ECE classrooms are unfamiliar and costly to marginalised rural and urban poor children (Kalinde, 2016; Lungu & Matafwali, 2020; Madondo & Tsikira, 2022; Munsaka & Kalinde, 2017). Unlike indigenous games, which appreciate and reinforce child-constructed knowledge and group participation, modern games minimise socialisation and creativity in children. Therefore, this study investigated the role of indigenous games in enhancing early learning among preschool children in Chibombo District, Central Province, Zambia. It further endeavoured to advocate and promote indigenous knowledge that supports learning for all children to acquire literacy and numeracy skills.

## **1.5 RESEARCH QUESTIONS**

The study was guided by the following research questions.

### **1.5.1 Main research question**

What is the role of indigenous games in promoting early learning among preschool children in Chibombo District, Central Province, Zambia?

### **1.5.2 Secondary research questions**

The secondary research questions of the study were:

- Which indigenous games can promote the development of literacy and numeracy skills in preschool learners?
- How can indigenous games be used to promote the acquisition of literacy and numeracy skills in preschool learners?
- Which challenges do teachers face in using indigenous games in their day-to-day teaching of preschool learners?
- Which intervention measures can teachers use to incorporate indigenous games in their day-to-day teaching of preschool learners?

## **1.6 AIM, OBJECTIVES AND SIGNIFICANCE OF THE STUDY**

### **1.6.1 Aim of the study**

The aim of the study was to ascertain the role of indigenous games in enhancing early learning among preschool children for the acquisition of literacy and numeracy skills in Chibombo District, Zambia.

### **1.6.2 Objectives of the study**

The objectives of the study were as follows:

- To identify indigenous games that teachers use to promote the development of literacy and numeracy skills in preschool learners in Zambia;
- To determine how indigenous games can be used to promote the acquisition of literacy and numeracy skills in preschool learners in Zambia;

- To identify the challenges that teachers face in using indigenous games in their day-to-day teaching of preschool learners;
- To suggest the intervention measures that teachers can use to incorporate indigenous games in their day-to-day teaching of preschool learners.

### **1.6.3 Significance of the study**

This study was significant as it contributed to the role of indigenous games in enhancing early learning for the acquisition of literacy and numeracy skills among preschool children in Zambia. The study also advocated and promoted the use of indigenous games in ECE in order to strengthen instructional strategies and playful activities for learners in preschool. The study also provided wonderful insights to teachers who participated in the study as it enabled them improve their teaching and learning using traditional games.

## **1.7 THEORETICAL FRAMEWORK**

Babale and Lawal (2021) suggest that a theoretical framework is the structure that supports and describes a theory. A theory is a set of interconnected concepts and definitions that present a methodical view of occurrences by describing the relationships among the variables for explaining these phenomena (Grant & Osanloo, 2014; Kivunja, 2018). As such, a theoretical framework is important as it works as a guide that researchers use to interpret the findings through the provision of a structure needed to organise data and make meaningful conclusions (Kivunja, 2018). A theoretical framework therefore helps researchers to borrow ideas from other scholars in order to develop their own research enquiry (Babale & Lawal, 2021; Grant & Osanloo, 2014). The researcher strongly believed that a theoretical framework was necessary in order to provide a guideline that was used to ensure the research was focused, research methods were chosen correctly, data were collected using appropriate methods and analysis of data conducted thoroughly so that rigour was achieved.

This study was anchored on three theoretical approaches, namely (1) *indigenous knowledge systems (IKS)*, which relies on knowledge of games that children have from their community, (2) *Piaget's theory of play*, which argues that children are active learners and enjoy learning when it is done through play, and (3) *Lev*

*Vygotsky's sociocultural theory*, which posits that children learn through active interaction with adults and among themselves.

### **1.7.1 Indigenous knowledge systems (IKS)**

Traditional games, or indigenous games, in most African communities have been played and have been carried down over many generations, where they have been transmitted through various forms over centuries (Madondo & Tsikira, 2022; Moloji et al., 2021; Nxumalo & Mncube, 2019). These traditional games make up the indigenous knowledge systems (IKS) that this study adopted. According to Madondo and Tsikira (2022), traditional games are not merely played for leisure, but are an integral part of IKS and are similar in nature but have different names, depending on the community or place where they are played. IKS therefore brings together various games, songs, stories, skills, rules and applications of knowledge and activities that are common in a particular society, and is used for teaching skills such as sounds, pre-reading, pre-writing, number sense, measuring and counting, among others, to children in preschool.

According to Munsaka and Kalinde (2017), games greatly influence child development, as they bring about psychomotor, cognitive, social and emotional development, which leads to the acquisition of literacy and numeracy skills. Indigenous games provide children, or learners, with an array of skills that support physical development, at the same time enabling learners to learn measurement and counting and improve their vocabulary as they play various games, such as *waayi ngooyu* (peek-a-boo), *waida* (game uses elastic rope made into a regular shape used for hopping), skipping (a rope game played by 3 or more children allowing them to skip a rope and counting takes place in the process), *chiyato* (a game where children fork out), *nsolo* (game in the family of draft board game), draft, *mbelele* (local equivalent of 'sheep sheep come home'), *Namoonga* (paired dancing of males and females while singing), and *touch* (played after rains when the ground is soft), among others. Games promote *critical thinking* and *creativity* (Nxumalo & Mncube, 2019), which are essential for cognitive development, thereby bringing about early learning in preschool children. Indigenous games promote the development of emotional intelligence, which is critical for developing children who are innovative, creative and resilient to various challenges that they might face in the learning

process in preschool and beyond (Acharibasam & McVittie, 2020; Nxumalo & Mncube, 2019).

Scholars such as Conrad (2019) and Williams (2019) have shown how Eurocentric approaches in the teaching of various subjects in school can be contested as undermining the usefulness of other world cultures, including African cultures. It is for this reason that Moloji et al. (2021, p. 242) advance the idea of “decolonising education systems” in Africa, by encouraging learners to view “indigenous skills, knowledge and games” as tools for learning critical mathematical concepts, and not just for leisure or fun. This then helps in eliminating the Eurocentric notion that Africans can only learn and develop if they are educated in a Western system, which sees African indigenous skills, knowledge and games as irrelevant in a formal education system (Moloji, 2020). It is generally accepted that people use the wealth of knowledge that is known to them from the local environment they live in, be it in cities or rural areas. For this reason, it was anticipated that children in Chibombo District, Central Province, Zambia have a wealth of indigenous knowledge and skills regarding games, that can be used to teach literacy and numeracy. The indigenous games that exist in Chibombo District, as well as those that seem to be dying out, were applied in order to ascertain the role they play in enhancing early learning among preschool learners in Zambia.

### **1.7.2 Piaget’s theory of play**

Jean Piaget posited that children are active learners, not passive learners, and that they use first-hand experience to develop their learning and understanding of their environment (Bonel & Lindon, 2014). Piaget believed that children learn through imitating others and transforming this into symbolic behaviour. This means that children can learn from both adults (their teachers) and their peers (other learners) during playful learning using indigenous games. Teachers are thus scaffolders, who ensure that they provide space and an environment that is suitable, that is, teaching and learning that is full of play activities using indigenous games. In this way, children construct knowledge through interactions between their own age group and teachers or significant others in the school and home (Aboum et al., 2018; Madondo & Tsikira, 2022). Munsaka and Kalinde (2017) explain that Piaget’s theory of play posits that children engage in types of play that reflect their level of cognitive

development: functional play, constructive play, symbolic/fantasy play or games with rules.

In functional play, Munsaka and Kalinde (2017) argue that children make body movements, such as running, jumping, sliding, gathering, dumping, manipulating and stacking objects. This type of play includes informal games that do not have rules to follow. Objects can be used, or no objects whatsoever can be used. Constructive play involves the use of objects, such as blocks, toys, sticks, stones, sand, clay and paint, which are used in an organised and goal-oriented manner (Munsaka & Kalinde, 2017). With time, children begin to engage in symbolic/fantasy play, which involves role playing or make-believe play, such as pretending to be a baby, pretending to drive a car, or using a block of wood as a cell phone. As children grow older, they become involved in indigenous games with peers that are controlled by pre-established rules, such as *nsolo*, *pada*, *tag* and *sheep-sheep-come home* (Munsaka & Kalinde, 2017). Piaget viewed these forms of play as progressive, or cumulative, as they bring out initiative and creativity in children. Of all these forms of play, symbolic/fantasy play is viewed by many ECE experts as the highest level of play in preschool and kindergarten, as it develops children's social skills, basic mathematical abilities, early literacy concepts and behavioural self-regulation (Bodrova & Leong, 2015). This is important, as it prepares children for later academic, social and emotional success.

Scholars agree that different forms of play contribute immensely to developmental domains in children, and that the usefulness of each of these forms of play cannot be underestimated (Madondo & Tsikira, 2022; Munsaka & Kalinde, 2017). This study therefore argues that play takes place in a socially constructed environment where children feel safe and free to play. This is confirmed by Madondo and Tsikira's (2022) study, which revealed that traditional children's games take cognisance of children's sociocultural context and are thus culturally relevant. This shows that teachers need to vary the forms of games, or play, that children engage in during lessons, to accommodate the sociocultural context that each child brings to the classroom. The sociocultural theory discussed in the next section is therefore appropriate for this study, as it helped the researcher to situate the study within the different indigenous games and establish the influence indigenous games have on

enhancing early learning for the acquisition of literacy and numeracy skills among preschool learners in Zambian schools in rural and urban areas. This is significant as it shows that play and society are interconnected.

### **1.7.3 Lev Vygotsky's sociocultural theory**

Social interaction plays a fundamental role in the development of cognition in children. Lev Vygotsky's sociocultural theory postulates that children seek out adults for interaction, beginning at birth, and that development occurs through these interactions (Nilsson & Ferholt, 2014). The theory further posits that this is the only process of learning in children. It contends that a child who is at play continues to have conversations with either themselves or others and continues to make sense of the world around them (Selmi et al., 2015). This is compelling for ECE teachers to allow children to socialise and communicate in a playful manner in all their lessons (Rapp, 2014; Serpell, 2020). This will bring about meaningful and successful child development and learning, as children will fully engage in the whole learning process through play (Bonel & Lindon, 2014; Mwanza-Kabaghe et al., 2015).

In his construct of the zone of proximal development (ZPD), Vygotsky alludes to the fact that through play, children stretch their boundaries to figure out situations and then construct knowledge (Nilsson & Ferholt, 2014). This supports the claim that the essential characteristic of play is that it is a rule that has become a desire, which helps us to understand how, in the ZPD of play, the creation of the new is possible. Sørensen (2021) concurs with this theory that play is not a predominant activity during preschool years but is the leading source of development. This is confirmed by the development of a creative pedagogy of play by the Swedish theorist Ditte Winther-Lindqvist, who strongly agrees with Vygotsky's theories of play. In her view, children are never alone in play, but are with adults, who are always part of children's play, even when this consists of creating a protected space for play (Winther-Lindqvist, 2019).

This study used Vygotsky's sociocultural theory, as it is an all-embracing theory of learning through play that combines emotion and thought, aesthetics and rationality. This is so because emotions and imaginations are dialectically related, as the

images of our imagination provide our emotions with an internal language, and emotions influence our imagination, thus encouraging us to develop the new (Munsaka & Kalinde, 2017). As such, the study argues that teachers are well placed as deciders of children's learning through play and the use of indigenous games, as they are adults in control of the learning space in preschool, and they are the ones who know what is in the curriculum for children's internalisation (Selmi et al., 2015). This means that teachers must be equipped with indigenous knowledge and games, as well as skills that will allow them to apply play, and appropriate teaching methods/aids that will lead to successful learning. This theory was relevant to this study as it ultimately promotes self-regulation and early learning skills, such as pre-reading, pre-writing and arithmetics, among preschool learners that are much needed for holistic child development. The theory was also relevant as it relies on culture, social experiences and ZPD that is promoted and enhanced by interactions that learners have with teachers who are custodians of the social fabric in the school environment.

## **1.8 RESEARCH METHODOLOGY AND DESIGN**

Research methodology is the science of studying various steps that a researcher takes in order to solve a research problem scientifically and systematically (Hennink, Hutter & Bailey, 2020). By contrast, research methods are the techniques a researcher employs in the process of conducting a research study in order to provide a solution to a research problem under investigation (Kothari, 2019; Kumar, 2019). The emphasis in research methodology is to give clear reasons for why a research approach has been adopted, and why it is more suitable for the problem under investigation than other approaches (Kumar, 2019). This section therefore clarifies the research paradigm, the research strategy, the population and sampling, the instrumentation and data collection techniques, the data analysis and interpretation techniques, the data trustworthiness, and the limitations and delimitation of the study.

The research design is the 'glue' that holds all the elements in a research project together. According to Hennink et al. (2020), the research design does not only anticipate and specify the seemingly countless decisions connected with carrying out data collection, processing and analysing, but also endeavours to present a logical



basis for the decisions made in a study. The emphasis is on conducting a systematic study with laid-down guidelines for research on early childhood education (ECE), from conceptualisation to reporting of the findings (Christensen & James, 2017).

In this study, I adopted a participatory action research (PAR) design through an interpretivist paradigm and critical theory. This provided an in-depth understanding of the role that indigenous games play in enhancing early learning in preschool learners. This approach was appropriate, as it addressed the relationship that exists between indigenous games and desired learning outcomes in ECE learners, such as the acquisition of literacy and numeracy skills, as postulated by Creswell (2014) and Mason (2018).

### **1.8.1 Research paradigm**

A research paradigm according to Linake, Maphosa and Mthethwa-Kunene (2022, p. 90) is “a worldview informing the researcher’s research position. It is based on philosophical underpinnings defining knowledge, reality and values”. Other scholars argue that a research paradigm is a set of collective views and agreements that researchers share about how societal challenges and problems may be understood and dealt with (Cohen, Manion & Morrison, 2018; Corbin & Strauss, 2015; Linake et al., 2022). The sets of beliefs or views are created by humans who hold certain viewpoints when constructing meaning from data collected from the research field (Linake et al., 2022). The viewpoint of each researcher guides the choices that one makes during the research process. This section deals with the research paradigm that was chosen as appropriate for this study.

#### *1.8.1.1 Interpretivist paradigm*

An interpretivist paradigm is an approach that is concerned with understanding the world as it is from the subjective perspective of individuals (Dean, 2018; Hammersley, 2015; Kothari, 2019). According to Hennink et al. (2020), the interpretivist paradigm is founded on the assumption that techniques used for understanding knowledge in the human and social sciences cannot be the same as techniques used for understanding knowledge in the physical sciences, as the latter use scientific measurement, while the former applies a relativist ontological perspective. Therefore, the interpretivist paradigm holds the view that a single

phenomenon can have multiple interpretations, or world views, depending on the lens one uses to see, or the approach that is taken and applied (Dean, 2018). As Hammersley (2015), Dean (2018) and Hennink et al. (2020) observe, the main interest of an interpretivist researcher is not to generate new theory, but rather to evaluate and refine existing theories related to interpretivism. The interpretivist paradigm was suitable for this study, as it provided an array of interpretations on actions taken by teachers during lessons, and it generated a wealth of knowledge, which can be applied differently in different communities or localities. This paradigm assisted me to explain various meanings of occurrences in schools as teachers taught their learners. It also helped me to interpret the real issues that surrounded the teachers' use or none of us of traditional games in their lessons. However, interpretivist research findings have the limitation of not being generalisable, or replicable or applicable, to groups or subgroups of the population other than where the study was conducted, which necessitated the application of critical enquiry (Atkinson, 2015), which I discussed in the following section.

#### *1.8.1.2 Critical theory*

Critical enquiry, or theory, is concerned with enabling human beings to rise above the limitations placed on them by race, gender and class (Creswell & Poth, 2018; Hennink et al., 2020). According to Creswell and Poth (2018), researchers need to acknowledge their own power, engage in dialogue, and use theory to interpret and illuminate social action. Atkinson (2015), Hammersley (2015) and Hennink et al. (2020) explain that critical enquiry assumes that social reality is historically constituted, and that it is produced and reproduced by people. It is important to note that regardless of the ability of human beings to bring about social change in their places of work and living, there are barriers to doing so, such as social, cultural and political domination.

In view of the foregoing, critical researchers encourage educators and curriculum designers to self-critique and provide themselves with an environment that allows questioning of the status quo, in order to reorient the curriculum and practice, thereby promoting innovative ideas that can bring about change in education practice (Atkinson, 2015; Creswell & Poth, 2018; Hammersley, 2015). Pham (2018, p. 4) argues that "education researchers and educators can benefit from critical

theory, by understanding how teaching and learning have evolved over a period of time due to changes brought about by the sociocultural, political and economic situation” of a society. Critical theory was appropriate for this study, as it enabled me to discover the taken-for-granted social, cultural, economic and political situation that prevails in rural preschools, which are alienated from indigenous games and have teachers who opt to apply modern Eurocentric teaching methods and approaches at the expense of familiar local games.

### **1.8.2 Research approach**

A research approach is “a plan or procedure for conducting a study, which includes the steps from the philosophical assumptions to the methods of data collection” (Linake et al., 2022, p. 93). It is the method or way in which a researcher decides to answer the research questions influenced by philosophical beliefs about the way data is collected, analysed and interpreted (Hennink et al., 2020; Linake et al., 2022). There are three main approaches to research which include qualitative, quantitative and mixed methods research approaches (Linake et al., 2022). This study was positioned in the qualitative research approach.

According to Creswell and Poth (2018), qualitative research is an inquiry that is naturalistic in nature and seeks an in-depth understanding of a social phenomenon in its real-life context. It uses data that is obtained from first-hand observations, interviews, discussions, photographs, questionnaires and video recordings, among others (Kothari, 2019). It is premised on the tenets of natural enquiry, which brings about multiple realities of a studied phenomenon. Hennink et al. (2020, p. 92) posit that qualitative research “aims at gaining a detailed contextualised understanding of the phenomenon studied”. It is a world view that allows researchers in the social sciences and education to come up with strategies that are aimed at building better education practice among teachers and learners, to promote quality learning. It is concerned with text and people’s voices, views, thoughts, feelings, intentions and ideas on a subject (Creswell & Poth, 2018). Data collection is usually through forms that capture narratives, stories and explanations, or, indeed, observable aspects. Analysis of qualitative data often takes a thematic approach that uses thick descriptions and use of computer assistive tools such as NVivo and ATLAS.ti (Creswell, 2014; Hammersley, 2015). This research approach was found suitable for

this study, as it accommodated the interpretivist paradigm, which explained views and thoughts from teachers on how indigenous games, if used, help in promoting acquisition of literacy and numeracy skills in preschool learners in a particular local context/setting.

#### *1.8.2.1 Research design- Participatory Action Research*

Action research is a research design that aims at bringing about “change and improvement at the local level” such as schools in communities (Cohen et al., 2018, p. 440). This research design was developed by Kurt Lewin in the 1940s and argued that it was cardinal for bringing about change in social practice especially in fields such as education and health (Creswell & Poth, 2018). According to Cohen et al. (2018), the main purpose of developing action research is to bring about social change for disadvantaged groups in relation to “housing, employment, prejudice, socialisation and training” (p. 440). Combining “action” and “research” has attracted several researchers, teachers and academics to this research design, and also breaking the culture of being spectators during research (Creswell & Poth, 2018).

There are several types of action research that scholars advance as research designs (Creswell & Poth, 2018). Action research, therefore, includes participatory action research, practitioner research, classroom-based action research, and empirical action research among others (Cohen et al., 2018). Participatory action research (PAR) was chosen for this study because it allowed for active commitment and collaboration between the researcher and the participants. Cohen et al. (2018, p. 441) argue that participatory action research “breaks the separation of the researcher and the participants; power is equalised and, indeed, they may all be part of the same community”.

Since this research design was an investigative study which was “intentionally directed towards solving a problem or focusing on an issue raised” (Cohen et al., 2018, p. 441), the study endeavoured to work collaboratively with preschool teachers in the selected research site. This study therefore adopted a participatory action research design, as it was best suited to answer questions of “how” and “why” in research (Luciani et al., 2019) whose phenomena were studied in a real-life context,

where the researcher took part in activities taking place in and outside the preschool classroom.

### **1.8.3 Population and sampling**

This section discusses the population and sample of the study including sampling procedures and aspects of inclusion and exclusion.

#### *1.8.3.1 Population*

A population is a pool of individuals from which a statistical sample is drawn for a study (Kothari, 2019; Lamm & Lamm, 2019). The population of this study was all 163 public primary and community schools in Chibombo District. Of this number, 44 schools were annexes to primary schools while three were standalone ECE centres. According to records at the office of the District Education Board Secretary in Chibombo, there were a total of 68 qualified ECE teachers in the district. This study comprised ECE teachers with their learners in the classrooms as major participants. Teachers were chosen because they were the ones who were practising ECE in schools/centres, and they could relate to games in teaching and learning. I applied a deductive approach when selecting the participants and later inductively refined the sample during data collection.

#### *1.8.3.2 Sample*

A sampling frame is “a list of the actual cases from which sample will be drawn”, and it “must be representative of the population” (Taherdoost, 2016, p. 20). Non-probability sampling was adopted, and a purposive sampling technique was used, due to its suitability in participatory action research design for qualitative research (Kothari, 2019). It was the most appropriate technique, as it was useful for examining real-life phenomena and bringing about social change in early childhood education practice (Cohen et al., 2018; Kemmis, McTaggart & Nixon, 2014; Kothari, 2019).

Four schools were purposively selected, in that only schools with ECE centres and teachers who had been teaching in public primary schools for at least four (4) years in Chibombo District, Central Province were sampled. The reason for this choice of schools was that each school only had a maximum of three ECE teachers. Most

teachers who were teaching in ECE classes in the district had less than a year of teaching experience while others were unqualified ECE teachers. I therefore involved only teachers who were practising ECE for a minimum of four years, so that they could share the knowledge of what they had observed and experienced over the extended period that they had been teaching since 2014 when ECE was implemented in public schools in Zambia. All four schools were rural due to the nature of the chosen research site. Two ECE centres selected provided two teachers while the other two schools provided three teachers. The study had ten ECE teachers with varying numbers of ECE learners per class. The lowest number of learners was 37 in a class while the highest number had 110 learners. Learners in each class were followed in their learning activities after interviews had been conducted with the teachers.

The study started with creating rapport with the participants. Thereafter, interviews were conducted followed by focus group discussions for teachers to share ideas on indigenous knowledge and how helpful the games were in fostering the acquisition of emergent literacy and numeracy skills. This allowed teachers to discuss points from the interviews, as well as to share their own knowledge on indigenous games. During the research process, document analysis was conducted in order to ascertain planned activities that teachers use in their lessons that involved traditional games and provided for rigour in research. Chibombo District was chosen due to its proximity to the researcher's work environment, as well as the diversity of languages and cultures in this district, which allowed a rich analysis of the various indigenous games in each culture. The selected research environment provided an array of indigenous games in the Tonga, Bemba, Nyanja and Lenje languages.

#### *1.8.3.3 Inclusion and exclusion criteria*

The primary inclusion criterion in this study was being a qualified ECE teacher with training of not less than two years at a college, or four years at a university and a minimum of four years of teaching experience in public schools. All literature and participants unrelated to ECE were excluded from the study, as suggested by Vass, Rigby and Payne (2017), who excluded all literature, participants and issues that were unrelated to the health study they were conducting. Head teachers and senior teachers were also excluded from the study, as they did not practice ECE in the

classroom. The role of head teachers, deputy head teachers and senior teachers was to provide needed support to the researcher as gate keepers in the research field.

#### **1.8.4 Instrumentation and data collection techniques**

Instruments in research are tools or protocols used to collect, measure and analyse data for a subject under study (Malmqvist, Hellberg, Möllås, Rose & Shevlin, 2019). Techniques in research are individual methods or approaches that a study adopts to help in collecting data, to enable the findings to be credible and trustworthy, especially in the case of qualitative studies (Abdalla, Oliveira, Azevedo, & Gonzalez, 2018; Lemon & Hayes, 2020). According to Kothari (2019), qualitative studies normally employ interviews, observations, focus group discussions, document analysis and audio-visuals as tools for data collection. Depending on the type of research design a study adopts, appropriate research tools for a particular design will apply (Creswell & Poth, 2018). This study adopted a participatory action research design using an interpretivist paradigm and critical theory. As such, the study conducted interviews, focus group discussions, participant observations and document analysis to collect data. These tools were chosen as they were the most appropriate tools for interpretivist studies (Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019; Kvale & Brinkmann, 2015) that allow researchers and participants to work together in generating knowledge and bringing about social change and practice in schools (Cohen et al., 2018; Kemmis et al., 2014).

##### *1.8.4.1 Interviews*

Interviews in research have been used for many years to gather useful information in fields such as education, health sciences and social sciences (Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019). Interviews are one of the best methods of gathering first-hand information from people on their views, thoughts, feelings, wishes and hopes regarding their own lives and those of others (Kvale & Brinkmann, 2015). An interview is a professional conversation, and it has become popular over the years, especially in marketing and social science research, for the purposes of providing thoroughly tested information through well-structured questions (Kothari, 2019). Interviews need thorough preparation, time to conduct them, energy and

patience, as they can be taxing (Creswell & Poth, 2018; Kothari, 2019; Kvale & Brinkmann, 2015).

There are three main types of interviews, namely unstructured, semi-structured and structured interviews (Kumar, 2019). Unstructured interviews usually have set questions that are closely followed, but open-ended questions are used, so that the conversation can cover a wide range of subjects (Kothari, 2019; Kumar, 2019). The challenge is that there might be too much information, which will be difficult to decipher (Creswell & Poth, 2018). Semi-structured interviews are more popular, as they provide an interview schedule to guide the conversation, while allowing both open-ended and closed-ended questions to be asked (Kumar, 2019). Structured interviews have a rigid set of questions with specific answers expected, and they leave little or no room for unasked questions to be discussed (Creswell & Poth, 2018; Kvale & Brinkmann, 2015).

This study employed semi-structured interviews, as they provided information through open-ended and closed-ended questions on indigenous games, and children's games and play, as well as learning spaces (Norozi & Moen, 2016). This type of interview was appropriate, as the different cultures in the communities that were studied had information that the researcher did not possess on indigenous games. Semi-structured interviews allowed the participants (the teachers) to provide more information than asked, depending on the cultural values and practices of their communities. In this study, I asked the participants questions about their previous ECE training, their knowledge of indigenous games, and ways of applying indigenous games in teaching literacy and numeracy skills, among other things. Considering that the world was still grappling with the Covid-19 pandemic, the interviews followed all guidelines for preventing the spread of the virus by sanitising and social distancing during face-to-face interviews.

#### *1.8.4.2 Focus group discussions*

A focus group discussion, or interview, is a form of interview that is conducted in a group, as it brings together participants from a larger social group (Creswell & Poth, 2018; Kothari, 2019). This research method allows participants to generate rich data, which they would not have shared during individual interviews (Kothari, 2019). It also



allows participants to ask each other questions and clarify research questions and helps the researcher to refocus the objectives of the study (Creswell & Poth, 2018; Kothari, 2019). This study therefore endeavoured to convene a focus group discussion with participants at the district resource centre in Chibombo District.

#### *1.8.4.3 Classroom observations*

According to Kumar (2019, p. 274), observations are “a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place”, and they are one of the “ways of collecting primary data”. Observations are a critical way of collecting data, especially when researching children and childhood, as questioning might not elicit the desired responses, due to age and a lack of understanding of the objectives of the study (Brinkmann & Kvale, 2015; Hammersley & Atkinson, 2015). A researcher who chooses to do observations in a study can either be a participant observer or a non-participant observer (Christensen & James, 2017; Kumar, 2019).

I observed the natural environment in the classroom as teachers taught learners using indigenous games. Observations were conducted after the interviews and focus group discussions had been concluded, in order to give teachers an opportunity to implement aspects that were discussed. I was a participant observer, in order to reduce the power differential between the learners and the researcher, so that the learners participated freely (Hammersley & Atkinson, 2015; Hennink et al., 2020). This was important, as it made children to be viewed as partners in research, and not as incompetent participants (Norozzi & Moen, 2016). It is important to stress that power differentials in any research study cannot be completely removed, as most decisions, such as conceiving of a research topic, conceptualising the methods to be used, and deciding who will take part, are done by the researcher, without any involvement by the participants (Christensen & James, 2017; Hennink et al., 2020).

#### *1.8.4.4 Document analysis*

Document analysis is arguably one of the most organised methods of examining, assessing or evaluating information that exists in an organisation in either soft or hard copy (Flick, 2018; Morgan, 2022). Cohen et al. (2018, p. 551) suggest that document analysis or review is a procedure where researchers become participant

observers as they use documents to gather information on “unspoken topics” and “observe events or behaviours that might not be mentioned in the interviews” or other methods of data collection. Flick (2018) and Morgan (2022) emphasises that examining documents enables researchers to obtain data and interpret it without involving human participants. Additionally, Morgan (2022) advises using document analysis as a data collection tool in order to reduce biases from human participants who might distort information to suit their own narrative. This study therefore made good use of documents that teachers prepare such as schemes of work, weekly forecast, daily routine schedules, lesson plans and records of work. This enabled me to find out whether teachers made any effort to plan lessons that included traditional games or indigenous games.

#### **1.8.5 Data analysis and interpretation**

Data analysis and interpretation are vital in qualitative research, just as in quantitative and mixed methods research, as they have a major influence on the outcome of the study (Creswell, 2014; Flick, 2014; Hennink et al., 2020). Analysing and interpreting texts, verbatim quotations, videos, pictures and observation notes require the use of a whole range of methods and techniques (Cohen et al., 2018). As such, this study used different methods of analysing data such as thematic analysis and computer assistive tools such as ATLAS.ti 23 in order to obtain a more accurate understanding and meaning of the phenomenon being studied.

There are “three main ways of analysing and reporting findings qualitatively, namely, developing a narrative to describe a situation, episode, event or instance, identifying the main themes that emerge from the field notes, the transcribed verbatim quotations or the data, and quantifying, by indicating the frequency of occurrence” (Kothari, 2018, pp. 494-495). For this to be achieved effectively, there are six steps that need to be carefully followed: (1) familiarising oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) classifying responses under the same theme, and (6) integrating themes and responses into the text of the report (Kothari, 2019).

For this reason, thematic analysis was used, by looking for related themes and then describing the information in themes and patterns that are exclusive to the selected

participants. Data were further described in detail using direct citations and verbatim quotations obtained from audio recordings, observation notes and interviews on the role of indigenous games in enhancing early learning in preschool learners. Descriptive analysis was conducted to generate frequencies.

## **1.9 DATA TRUSTWORTHINESS**

Qualitative enquiry has received growing support in the field of education research, due to its ability to present findings in various forms (Connelly, 2016; Stahl & King, 2020). Of concern in this type of enquiry is how credible and trustworthy data in a research is viewed (Aspers & Corte, 2019; Lemon & Hayes, 2020). As such, the trustworthiness of data in a qualitative study is largely determined by the approaches that the researcher adopts (Abdalla et al., 2018). This study ensured that there was credibility, dependability, transferability and confirmability, which I discussed below.

### **1.9.1 Credibility**

Credibility in qualitative research concerns the extent to which the research findings or results can be trusted as having presented facts as they occur in the natural setting, or indeed the environment where the phenomenon is studied (Nassaji, 2020). According to Stahl and King (2020), one method of ensuring that there is credibility in each research study is to employ a variety of techniques for collecting data, in order to reach some form of congruence. Shufutinsky (2020) explains that data needs to be collected and analysed in various ways in order to obtain the underlying meanings from narratives and stories without losing the focus of the study. This study endeavoured to demonstrate an audit trail of the data collection and analysis process throughout the study, as suggested by Lemon and Hayes (2020).

### **1.9.2 Dependability**

Dependability is the equivalent of reliability in quantitative research methods (Abdalla et al., 2018; Nassaji, 2020; Stahl & King, 2020). The idea is that after a conclusion has been reached by a researcher using qualitative research methods, the same findings or results can be reached by other scholars, who would reach a similar conclusion (Nassaji, 2020). To ensure the dependability of a particular study,

Johnson et al. (2020, p. 145) argue that “the research method must be reported in detail” so that scholars or readers who look at the study can see exactly what methods were followed, as well as ascertain whether the same methods can be used by other researchers in the future and find similar results. In this study, I therefore did what Lemon and Hayes (2020) did in their study, by ensuring that all methods and techniques were reported in detail and with great thoroughness, so that future researchers could use them and find similar results.

### **1.9.3 Transferability**

Transferability is the ability of the findings of a research study to apply to another research context or study (Stahl & King, 2020). It is the equivalent of generalisation in quantitative studies. Since the sample size in qualitative research is usually small, and an interpretivist paradigm is used, it is appropriate to use transferability rather than generalisation, which normally applies to quantitative research (Abdalla et al., 2018; Nassaji, 2020). In this study, I endeavoured to communicate descriptions of factors regarding the sampling and the data collection and analysis, as suggested by Johnson et al. (2020). A detailed step-by-step data collection and analysis procedure was provided in this study, so that other scholars can use it in future studies, as recommended by Lemon and Hayes (2020).

### **1.9.4 Confirmability**

Confirmability is a description of the extent to which a study is neutral, and its findings are a true reflection of the participants' views and opinions, rather than the researcher's biases, motivations and interests (Abdalla et al., 2018). It is therefore important to endeavour to reduce to the very minimum the influence that other factors might have on the results of the study, by meeting the standards of rigour, such as cross-checking, use of multiple methods of data collection and analysis, and peer review (Johnson et al., 2020). This study applied Nassaji's (2020) suggestion of “describing data and the findings in such a way that their accuracy could be confirmed by others [through an] audit trail” (p. 429). A record of an audit trail, alluded to by scholars (Abdalla et al., 2018; Johnson et al., 2020; Nassaji, 2020), with the steps taken and the decisions made in the data collection and analysis, has been kept for future evaluation.

## **1.10 RESEARCH ETHICS**

Notwithstanding the research approach that a qualitative enquiry adopts, a researcher is faced with hundreds of ethical issues to consider before, during and after data collection (Atkinson, 2015; Holmes, 2020). James and Prout (2015) recognise several issues that a researcher in a qualitative enquiry should consider, such as children's agency, access to the field, procedures for obtaining informed consent, confidentiality, anonymity, reciprocity and reflexivity. It is vital that the researcher keep in perspective the identified issues in the research, especially where young children are involved (Ngozwana, 2018; Spencer, Fairbrother & Thompson, 2020).

In this study, I followed all the ethical guidelines proposed by Hammersley (2015) and Atkinson et al. (2015) who argue that researchers should ensure that ethical dilemmas are dealt with carefully in order to elude complications in the research process. Before embarking on the process of accessing information in the field, I requested for permission to conduct a study in Chibombo District from the District Education Board Secretary's Office. I then applied for ethical clearance from the Research Ethics Committee of the College of Education of UNISA. After obtaining ethical clearance, I proceeded to the research field. The clearance letter from the District Education Office and ethical clearance gave me access to the head teachers of selected primary schools.

I provided a consent form for teachers to confirm their willingness to take part in the study, as well as the willingness of the learners they teach. From the outset, I made it clear that participation was completely voluntary, and that participants could choose to take part or withdraw at any point during the study. I clarified the content of the consent form, and clearly explained the objectives of the study. Through the teachers, I sought permission to involve learners as participants in the research by sending a consent form for their children's participation. I assured teachers and parents of their privacy, anonymity and confidentiality, and the safety of the children throughout the study, as recommended by Norozi and Moen (2016). The study endeavoured to adhere to the guidelines and principles of conducting research with

and for children, as advocated by different scholars (Atkinson, 2015; Graham, Powell & Truscott, 2016; James & Prout, 2015; Norozi & Moen, 2016).

The idea in this study was to emphasise the special position children occupy in research as active participants, and not as passive observers (James & Prout, 2015; Norozi & Moen, 2016). Spencer et al. (2020) advises qualitative researchers to balance and properly negotiate the power differential that exists between children and adults in a given research context. This is so due to the advantageous position that adults have over children, especially in the school environment, where learners view any older person in their classroom as a teacher, who wields much power and authority (Hammersley, 2015; James & Prout, 2015; Norozi & Moen, 2016).

## **1.11 LIMITATIONS AND DELIMITATIONS OF THE STUDY**

The limitations and delimitations of the study are discussed below.

### **1.11.1 Limitations of the study**

Limitations of a study are potential weaknesses, which are usually beyond the control of the researcher, and they may affect the study significantly (Theofanidis & Fountouki, 2019). Limitations can be associated with the chosen research design, funding for the research process, the researcher's expertise, proactiveness and experience, and the nature of the study (Akanle, Ademuson & Shittu, 2020; Queirós, Faria & Almeida, 2017). Akanle et al. (2020, p. 109) argue that limitations are unnecessarily negatives of the study, nor are they problems and issues that reduce the usefulness and validity of the research. Rather, they are constraints to the generalisability and application of the findings to other areas that are dissimilar with respect to culture, socio-economic status and language of instruction, among others (Theofanidis & Fountouki, 2019).

In this study, I was alert to a number of limitations that I was unable to control, such as cultural differences between the selected schools, the locality of the school (rural, urban or peri-urban), their willingness to participate in the study, the distance from my home to the research site, time constraints in terms of obtaining a broad range of data, the fact that I was working while studying, and financial constraints. Throughout the research, I endeavoured to find the best solutions to the challenges or

constraints encountered, in order to maintain the credibility and trustworthiness of the research.

### **1.11.2 Delimitation**

Delimitations in research are the characteristics that limit the scope and describe the boundaries of the study such as the sample size and geographical location that assist a researcher to narrow its focus (Akanle et al., 2020; Theofanidis & Fountouki, 2019). Delimitations also provide a choice of whether a study is conducted in a rural or urban setting or involves teachers or parents (Akanle et al., 2020). This study was therefore conducted in four selected rural schools in Chibombo District, Central Province, Zambia. The study took a general perspective on the use of indigenous games in promoting early learning through the acquisition of emergent literacy and numeracy skills. The findings in the study may not be generalisable to other cultures and areas, as games might differ in scope and application for each particular area or community in Zambia.

## **1.12 DEFINITIONS OF KEY CONCEPTS**

The definition of key concepts is a very cardinal aspect of any research. This section provides a definition of key concepts and terms that are embedded in this study.

### **1.12.1 Indigenous Knowledge Systems (IKS)**

Indigenous Knowledge Systems (IKS) have gained significant ground in various parts of the world (Mutekwe, 2015), with each community giving its own definition and application. According to Mutekwe (2015), IKS is increasingly seen as a “global heritage and a national resource” that can be used by all members of communities to better the lives of its citizens (p. 1297). IKS is therefore, defined historically as local or traditional knowledge that indigenous people have brought down with them from earlier times via the oral tradition (Matapo, 2021; Ramayenda, 2020). In ECE practice, IKS plays a key role in allowing educators and stakeholders to make good use of bits of knowledge and practices that are local and familiar to a community (Ramayenda, 2020). Teachers in this situation work with learners to plan lessons and execute them using locally available teaching and learning materials, local games, traditional songs and other familiar ways of teaching learners. IKS has made

it possible for cultural ideas, thoughts and beliefs to be preserved and used in different communities (Acharibasam & McVittie, 2020). In this study IKS therefore is the teaching and learning process that requires the use of traditional games, songs, materials and aspects that are locally available, familiar to the learners and teachers and easy to use especially in rural areas.

### **1.12.2 Indigenous games**

Indigenous games, or traditional games, are defined as play activities that are local in nature and involve the use of locally available knowledge and resources for purposes of recreation (Ramayenda, 2020). According to Ramayenda (2020, p. 14), indigenous games are “games that have been carried down from generations since time immemorial and are always connected with the cultivation of the concept of norms/rules in socialising or interacting that apply in the area in each type of game”. The required materials and know-how for one to play an indigenous game are inexpensive, as these games use locally available tools, materials, knowledge and skills. What is essential in most indigenous games is the need for an adult (teacher) in the environment where this type of game is taking place, to ensure the safety of all children involved (Moloi, 2020). Ramayenda (2020) equally defines indigenous games as the games that promote socialisation, as well as skills acquisition, which prepares learners for more complex adult roles. Tachie and Galawe (2021) describe indigenous games as those games that are local or traditional to a community and support the teaching and learning in schools. In this study, indigenous games are games that are found in Zambian communities and are familiar and known to the learners in this setting.

### **1.12.3 Early childhood education**

Early childhood education (ECE) is defined by Munsaka and Kalinde (2017, p. 8) as a “period of human development that extends from birth to six years old”. Different scholars have argued that it includes children who are below the age of 8 (Lungu & Matafwali, 2020; Ramayenda, 2020; Serpell, 2020). Lungu and Matafwali (2020b) defines this level of education as one with a component of care and child development, as well as an academic aspect, which is mostly done in learning through a play model. Ramayenda (2020) states that ECE is the education that involves games, songs, dances and activities that are playful in nature, using



materials and skills that are locally generated and applied in a local setting. In Zambia, ECE is a level of education covering the middle class (3–4-year-olds) and reception (5-6-year-olds) although at times even learners who are older than six years are found in some preschools. In this study, ECE is therefore education that takes place both at home and at school before a child enters Grade 1.

#### **1.12.4 Learning through play**

Pyle and Daniels (2016), as cited in Parker, Thomsen and Berry (2022, p. 2), state that “play has recently been redefined as a spectrum or continuum involving child-directed and also adult-guided and adult-directed activity” which ensures that there is learning through play in preschools/classrooms. For learning to take place in an ECE centre, teachers must be familiar with the different types of play, or games, that children engage in and how to apply each of these games in a learning trajectory. Parker and Thomsen (2019) explain that pedagogies that align closely with learning through play are those that are constructivist in nature and allow for cooperation, exploration, experiential learning, collaboration and discovery. A more thorough and detailed discussion of learning through play is provided in Chapter Two of this thesis. For this study, I situated and contextualised learning through play using a rural, poor African neighbour set-up, which requires the use of low-cost, and easy-to-use materials, tools and skills for promoting early learning in preschool learners.

### **1.13 CHAPTER OUTLINE**

#### **Chapter 1: Introduction and background**

Chapter One provides a background to the study, by giving brief discussions of indigenous games, learning through play, and early childhood education in Europe, West and East Africa, Southern Africa, and indeed Zambia. It also provides brief discussions on methodological choices such as population, sampling, data collection, data analysis, data credibility and trustworthiness, ethical considerations and definition of key term/concepts of the study.

#### **Chapter 2: Literature review**

The chapter provides a detailed and comprehensive review of relevant literature on indigenous games or traditional games, learning through play, and ECE practices.

### **Chapter 3: Theoretical framework**

Chapter Three discusses the theoretical framework, describing in detail the theories that explain the role of indigenous games in enhancing early learning among preschool learners. It shows how indigenous knowledge systems (IKS), Jean Piaget's theory of play, and Lev Vygotsky's sociocultural theory support the integration of indigenous games into Zambia's ECE curriculum, theory and practice.

### **Chapter 4: Research design and methodology**

This chapter discusses the research design and methodology employed in the study. The chapter explains the research paradigm, the population and sampling, the data collection and analysis, and ethical considerations. It shows how each aspect supported the study in endeavouring to gain insight into the role of indigenous games in promoting the acquisition of literacy and numeracy skills in preschool learners.

### **Chapter 5: Data analysis and interpretation**

The chapter presents the findings of the study, using appropriate qualitative approaches, and it also presents a detailed interpretation of the findings. It further explains the indigenous games that teachers use, and how they can be used, as well as approaches and strategies for implementing indigenous knowledge in preschools.

### **Chapter 6: Discussion of findings, conclusions and recommendations**

The chapter highlights the key concepts and aspects of indigenous games, and how such knowledge and skills can influence the acquisition of literacy and numeracy concepts for preschool learners. The chapter also discusses and analyses the findings of the study in relation to relevant literature and theory. Indigenous knowledge systems, Jean Piaget's theory of play, and Lev Vygotsky's sociocultural theory have provided a guide for the discussion and analysis of the findings. A six-step framework has also been proposed that can be applied to enhance the acquisition of emergent literacy and literacy skills. It further makes conclusions and recommendations to promote the integration of indigenous games into the ECE curriculum in Zambia.

## **1.14 CHAPTER SUMMARY**

This chapter contextualised the study, clarified the rationale and presented the statement of the problem, aims and objectives of the study including the key research questions. The chapter has further provided a preliminary literature review including the theoretical orientation of the study. The chapter has briefly highlighted the theories that the study is situated on, namely, indigenous knowledge systems (IKS), Piaget's theory of play and Vygotsky's sociocultural theory. The chapter has also discussed the research methodology chosen including giving a position on why the study was chosen. The chapter has also given the information on data credibility and trustworthiness, including ethical issues that to be considered. The chapter has closed with limitations and delimitations of the study and providing a definition of each key concept, including providing an outline of the chapters in this thesis. In the next chapter, I address review of literature in a comprehensive manner.

## **CHAPTER 2 : LITERATURE REVIEW**

### **2.1 INTRODUCTION**

Chapter one contextualised the study, clarified the rationale, and presented the statement of the problem, aims and objectives of the study including the key research questions. The chapter also briefly elaborated on the research methodology chosen including the justification for the study. The chapter further indicated that the main aim of the study was to highlight the role that indigenous games play in enhancing learning when applied in teaching of early childhood education learners in schools. Chapter One has equally highlighted the theories that would guide the study, namely, indigenous knowledge systems (IKS), Piaget's theory of play and Vygotsky's sociocultural theory. The three theories play a complementary role in showing the role that indigenous games play in enhancing early learning in preschool learners in Chibombo District of Zambia.

The current chapter examined relevant related literature on the role of indigenous games or traditional games in enhancing early learning in preschool children. The chapter gave a rigorous review of the literature on indigenous games and how they have a defining pedagogical significance in all developmental domains needed by Early Childhood Education (ECE) learners. The review of literature also elaborated on key aspects of play such as, the role of play in learning, the nature of play and the importance of play in supporting teacher enthusiasm for achieving desired learning outcomes such as emergent literacy and numeracy in ECE learners. It finally affirmed how indigenous games promote the development of cognitive, social, and physical skills in preschool learners. Emphasis was placed on making connections between indigenous games with the development of literacy and numeracy skills in preschool learners.

### **2.2 PLAY AND INDIGINEOUS GAMES IN ECE**

In this section, play and indigenous/traditional games as experienced in ECE by both teachers and learners were discussed in detail. Play has been discussed in its general usage in ECE worldwide and placing emphasis on African societies for socialisation and learning. Indigenous/traditional games were also discussed by

showing how they apply to enhancing learning in preschool children. The section closed by making a connection between play/games and their pedagogical application in early learning classrooms and curricula.

### **2.2.1 Play and games in early childhood education**

Play in Early Childhood Education (ECE) is a very broad topic that continues to generate thoughtful discussions and debate. Concepts such as 'play' (Bruce, 2018, p. 61) have remained topical over a long period across the world from the medieval era to modern times (James & Prout, 2015). Over the years, scholars have consistently argued that play cannot be separated from early childhood education as the two are intertwined (Bruce, 2018; Pyle, Poliszczuk & Daniels, 2018). As such, early childhood practitioners are encouraged to create an environment that promotes learning through playful activities (Bruce, 2018; Lungu & Matafwali, 2020b; Moloji *et al.*, 2021; Tachie & Galawe, 2021). The play activities suggested by scholars include indigenous games that this study is advocating.

The argument that children learn through play has often encouraged those who are opposed to play in education to dismiss it because the idea seems too broad and vague to be a valid and useful basis for teaching and learning in schools (Anders & Rossbach, 2015). Anders and Rossbach (2015) argued that it does not help when ECE programmes claiming to be play-centred lack a thoughtful rationale for their play policies and practices or when low-level, unchallenging activities called 'play' abound in their indoor and outdoor environments. This argument threatens the place of play in ECE by inviting misguided attacks on it and by encouraging educators to devalue play's importance as a context and medium for development during the early years of children in schools. Indigenous games, however, should be well planned, appropriate for the age of learners and respond to the area that needs to be addressed in a lesson.

Despite the arguments against play-centred learning (for instance Anders & Rossbach, 2015), play in ECE has historically been regarded as a mode that encourages and fosters early learning for young children (Froebel, 1887/1896; Pestalozzi, 1894/1915; Piaget, 1970; Vygotsky, 1978) and future child development. Schools and communities across the globe have used games and play to teach

different concepts to learners. For example, Hafina, Nur and Malik (2022) show that play and games have been part of the school system in Asia and Australia for many centuries. For this reason, games have continued to be supported by education stakeholders across the education spectrum, including Zambians. This study also strongly advocates for use of games in teaching and learning in preschools.

The Ministry of Education in Zambia for instance, in its school curriculum and syllabus stipulates that formal and structured academic work for children should take 40% while play activities should amount to 60% of all the allocated time (MESVTEE, 2013/2014). Even though the curriculum has given guidance on the amount of time that teachers can involve learners in games on a school day, implementation has largely been problematic. I have observed lessons in ECE centres that apply a stand-alone lesson format for each subject area in ECE. Teachers are made to prepare independent lessons for each learning area and deliver lessons similarly to primary school teaching approaches for older children. Only when the subject content for the day has been covered, that is when teachers allow learners to engage in free play which is usually unguided by adults. This approach often defeats the very essence of using what learners love most – play, to teach various concepts in mathematics and language among others.

Nakawa (2020) found that teachers in Lusaka, Zambia were finding difficulties in incorporating playful activities in their teaching and learning as they separated the subject content from play-based activities. This approach adopted by most teachers in Zambian schools created an atmosphere that portrayed play to be trivial and less important in the teaching and learning process. Nakawa (2020) further shows greater concern which seems to exist, that play in ECE is slipping away and that vigorous response is required to protect its important role in helping learners acquire skills necessary for holistic development. As such, the use of indigenous games in a play pedagogy is necessary in order to have a smooth process of teaching and learning using what is familiar to the learners and the teachers.

Scholars in Australia, Scandinavia and USA for instance, strongly support the use of play in teaching and learning of ECE learners. This is evidenced in studies by Bodrova and Leong (2015), Parker et al. (2022) and Pyle et al. (2018) who

emphasised the importance of play in teaching kindergarten learners. Bodrova and Leong (2015) for example, emphasised the need to use play that deals with children's zone of proximal development in managing tasks independently or assisted by a more competent peer or adult. Such use of play-based teaching approaches help learners to develop higher order mental functions smoothly. Parker et al. (2022) provide evidence on how play supports the acquisition of literacy skills such as sounds, sentence construction and vocabulary. Pyle et al. (2018) equally suggested that play is essential for teaching of mathematical concepts such as seriation, numbers, notation and measurements. Play therefore plays a significant role in developing children's skills in a holistic manner. In line with the above studies, playful teaching and learning using traditional games is of significant value in Zambia for similar results to be obtained.

The integration of play in the teaching and learning approaches in African countries is equally taking shape. In Ghana, Acharibasam and McVittie (2020) identified cultural games and support systems from communities that were vital for teaching and learning in ECE provision. The local games in communities were found to be integral in the development of preschool learners' cognitive, social, and motor skills. The integration of play into the school curriculum allowed learning to take place in a more relaxed manner using familiar games and materials. In Kenya, Wadende et al. (2016) worked with pastoral communities and helped communities realise that their culture and way of life were key in supporting early the learning of their children even before formal education could begin. Similarly, Ejuu (2019) mobilised knowledge and skills on the appropriate use of indigenous games in teaching literacy, social studies, science and mathematics to preschool learners in rural Uganda. In this study, specific attention was placed on indigenous games/play that support the development of numeracy and emergent literacy skills. The reason for this focus was to ascertain whether using indigenous games in Chibombo District would bring out similar learning outcomes as those obtained in Ghana, Kenya and Uganda.

In South Africa and Zimbabwe, evidence from scholarly works suggests a very strong appreciation of games and play in teaching preschool learners. Moloji (2020) argued that through games such as *diketo* (a coordination game) played in Qwaqwa, South Africa, learners were helped to solve "problems in mathematics" such as linear

functions using play. Madondo and Tsikira's (2022) study in rural Zimbabwe equally pointed out the vitality of using games that help learners to develop language and vocabulary skills at an early age. In Zambia, for example, Matafwali and Mofu (2023) conducted a study on the use of play – indigenous games, to foster the acquisition of skills in ECE learners using outdoor games in Lufwanyama District on Copperbelt Province. The findings revealed that there is a significant improvement in learner achievement when outdoor spaces are used for teaching and learning through games. The results of play being part of the school curriculum and its application promoted by all educators is very cardinal. The integration of play in the teaching and learning of ECE learners remains a vital step that should be encouraged in Zambian preschools. This study therefore found it necessary to investigate the role of indigenous games in enhancing early learning in preschool learners of Chibombo District in the Central Province of Zambia.

## **2.2.2 Children's play, games and pedagogy**

Children's play, games and pedagogy are of significance in this study as shown in the discussion below.

### *2.2.2.1 Pretend play or 'Make Believe'*

Mwanza-Kabaghe et al. (2015) and Nakawa (2020) support different forms of play that include pretend play (make-believe), guided play and free play to be part of the daily activities for learners in schools. Pretend play, according to Macintyre (2017), involves activities that allow children to pretend to be someone they are not in the real sense, such as talking to someone on what looks like a phone, "feed a doll", "stir a pot in the kitchen", "buy fruits in a pretend shop" and caring for a baby who is sick (p. 69-70). In pretend play, children take part in activities that they enjoy and choose to be involved in as they imitate adult activities and create their own imaginary worlds. It is important to notice that indigenous games are full of pretend play as children assign each other roles during the play for the activity to be fun, enjoyable and incident-free. Learners become leaders and lead the way in ensuring that the game is played well to each one's satisfaction.

By and large, this is a situation where children or learners assign action to symbolic objects by taking on roles, assigning meaning to objects and transforming reality into



a world that is easily understood by themselves (Bruce, 2018; Macintyre, 2017). This type of play is often used by children in their real world and local setting which makes indigenous games useful tools for knowledge building through local objects familiar to learners in their communities (Ejuu, 2019; Moloji et al., 2021). Learners also learn to support each other in ensuring that a task is completed to the satisfaction of the members. The interest, therefore, should be ensuring that all who take part in the classroom activities enjoy and participate fully through each other's support. Pretend play should therefore take place in a free environment with little or no influence from adults or teachers. I find this important in building confidence and leadership in learners through indigenous games that are familiar and locally available to teachers and learners.

#### *2.2.2.2 Guided and free play*

Guided and free play are forms of play that are complementary rather than independent of each other (Bruce, 2018). It is the form of play that children engage in through direction and guidance from adults or teachers in the social environment or learning space such as a classroom or outdoor area. According to Weisberg, Hirsh-Pasek, Golinkoff, Kittredge and Klahr (2016, p. 177), guided play refers to "learning experiences that combine the child-directed nature of free play with a focus on learning outcomes and adult mentorship". Children in this case engage in activities with little involvement of the teachers in their learning environment either indoor or outdoor, while adults provide necessary support that enables the achieving of set learning goals for a lesson or task (Macintyre, 2017). This approach allows learners to be engaged in the play activity without them realising that adults have planned the play activity and would like a certain outcome. It allows for freedom on the part of children while giving a chance to the teacher to realise the much sought for learning outcomes. The use of indigenous games to support the acquisition of literacy and numeracy skills becomes vital as these games are familiar to the learners and can be played with little influence from adults or teachers, thereby enhancing early learning in preschoolers.

As postulated by Weisberg et al. (2016, p. 178), guided play has two forms that include (1) teachers designing "the setting to highlight a learning goal while ensuring that children have autonomy to explore within that setting" and (2) teachers "watch

child-directed activities and make comments, encourage children to question, or extend children's interests". The activities in guided play should therefore be two-fold as shown in the argument by Weisberg et al. (2016) who have highlighted key areas of support by teachers on children's play activities. This allows learners to think, create and re-create knowledge for the improvement of skills acquisition in preschool children. Learners are more likely to engage in creativity and innovation when the type of games played are local and known to them such as indigenous games.

A teacher in an ECE classroom with a goal of teaching the concept of addition and subtraction to six-year-olds would provide stones, dig a smooth hole on the ground and put children around the dug hole. Such a teacher would then initiate a game of *chiyato* or *nsolo* and later leave children to continue as they sing and count the stones removed from the hole, minus those remaining in the hole. As children play, the mathematical concept of addition and subtraction would be taking place as postulated by Moloji *et al.* (2021) and Munsaka and Kalinde (2017) as well as Madondo and Tsikira (2022). The goal would have been met as set out by the teacher in his or her lesson plan of the day.

The activities in guided and free play therefore remain vital in early childhood education centres or schools in Zambia and beyond. Teachers in Zambia are encouraged to "allow children to initiate their own play activities, sustain the play and conclude it with minimal teacher influence or involvement" in order to intrinsically motivate learners as suggested by Weisberg et al. (2016, p. 178). However, when the opposite happens, children lose interest as they see adults or teachers as intruders in their spaces of freedom. It is reasonable to therefore conclude that guided play, encourages teachers and educators to ensure that children's activities are lively and fun for learners to fully participate in them. A balance must be struck by teachers and parents in how much guidance one provides in order to allow for innovation and creativity including independent growth to take root in learners from an early age. Indigenous games therefore remain vital in sustaining the morale of learners during class activities, indoor and outdoor.

### 2.2.2.3 Exploration-based learning

Exploration-based learning is a very active learning approach used in most kindergartens in various parts of the world. It involves learners learning through activities that promote curiosity and enquiry during the lessons or activities of the lesson (Loizou & Trawick-Smith, 2022). This means children can choose their own activities while teachers support the learning in the chosen activities (Parker et al., 2022). During such activities, children learn by first-hand experience, mostly by actively engaging in or participating in or exploring various components of games at hand, such as traditional games of *nsolo*, *touch*, *chiyato* or *chiyenga* and *wider* like the games that the researcher played during his childhood.

In preschool centres, for example, traditional games that require exploring the environment such as *cidunu* (a game of kicking a ball and hiding it) would allow learners to search through the entire outdoor area (Grindheim, 2021; Munsaka & Kalinde, 2017). The rules of a game such as *cidunu* stated earlier require a thorough search of the environment being used as a playing area until one child finds the ball that was hidden. The one who finds the ball first wins and receives a reward for further play with the ball. This game motivates learners to be systematic in doing assigned tasks and promotes resilience in children (Munsaka & Kalinde, 2017). Children also show that they are active persons involved in the game and not receptive individuals (Hedegaard, 2018). The indigenous game of *cidunu* therefore brings learners together, to socialise, develop mental faculties and cultivate a resilient spirit much needed beyond childhood.

The role of the teacher in exploration-based learning is to create materials that would catch the attention of learners (Vogt et al., 2018). The materials to be used include those proposed by Maria Montessori, which have different shapes, different colours, varying sounds and different weight (Hedegaard, 2018; Vogt et al., 2018). According to Hedegaard (2018), it is cardinal that play materials created for children's use should be those that prepare learners for mathematics, reading and writing in schools as well as helping children to navigate through their environment daily with less difficulty. This could be achieved through fantasy and role-play if applied in teacher lessons daily using local games. Vogt et al. (2018) therefore, encourages

teachers using indigenous games to be creative and use games appropriately in order to get maximum benefits from the games.

Play is therefore more response-oriented, where personal meaning is more important than adjusting to external reality (Bruce, 2018). This argument is amplified by hypothesising play and work as aspects that function together in serving the child in adapting to and learning from daily community and classroom experiences. This demands that ECE activities have a structure and plan that allows for play to co-exist with work or lesson tasks that promote the realisation of specific learning outcomes envisaged by teachers during lesson planning.

Since early childhood is concerned with the development of young children (Follari, 2015), a question that begs answers is how play can be of positive influence. To answer this question demands that play be appreciated as a complex and highly differentiated phenomenon. With the definition of play being highly problematic in scholarly circles, teachers and researchers often must decide whether chosen play activities would have a positive effect on intended learning outcomes or not. It becomes imperative therefore to distinguish play from work, routines, rituals, and play-related behaviour like exploration-based learning as argued by Bruce (2018) and, Pyle and Daniels (2017). The teacher is also better placed in deciding appropriate interventions for play using indigenous games or otherwise in schools in order to bring about positive learning outcomes.

#### *2.2.2.4 Play pedagogy*

Pedagogy is an encompassing term concerned with what a teacher does to influence learning in others (Hedges & Cooper, 2018). Pyle et al., (2018) posit that pedagogy is the instructional technique and strategy that allow learning to take place. Fesseha and Pyle (2016) also suggest that playful learning is the interactive process between educator and learner as applied in a learning environment. Pedagogy as such informs both curriculum (all the interactions, experiences, activities, routines and events planned and unplanned) and teaching as a practice. Early years' pedagogy as argued by Fesseha and Pyle (2016) is an extremely complex phenomenon comprising a wide variety of practices underpinned by principles acquired through

training and as a result, professionally, it should be viewed as a whole rather than as an aspect taken in isolation.

Pedagogy in educational phraseology has gained currency as a substitute for methods of instruction or techniques of teaching. Based in part on the misperception that teaching is a technical activity, this instrumental understanding of pedagogy rationalises and reduces the work of teaching to a universally applicable skill set (Bubikova-Moan, Hjetland & Wollscheid, 2019). As a result, the scientific pursuit of pedagogy often excludes the intimate choices and interactions that ultimately constitute instruction such as play (Hedges & Cooper, 2018). However, considering that teaching is a situated and reflexive activity requiring teachers' judgement in apprehending events of practice (Altun, 2018; Smith & Chao, 2018), the way curricular and instructional decisions are made remains a serious matter of discussion (Altun, 2018; Fesseha & Pyle, 2018)). I therefore posit that teachers who endeavour to apply local games to their lessons in ECE often obtain better learning outcomes from their learners as this study shows.

Whether philosophically at the centre or included peripherally in the curriculum, play remains a common and significant feature in programmes for preschool children (Altun, 2018). Some scholars have suggested that activities to be included in the ECE programmes should aim at providing educational play that is result-oriented academically, and not play for enjoyment only. For example, the implementation of specific play pedagogical techniques in ECE programmes is another way that Altun (2018) advocates for, where play pedagogy refers to using methods to stimulate, monitor, and evaluate educational play in young children in ECE. Therefore, this study concluded that the inclusion of activities in a play pedagogy that are indigenous and familiar to learners in a community so that both teachers and learners find it easy to navigate through tasks that promote positive learning outcomes in preschools remains vital.

### **2.3 INDIGENOUS GAMES**

There is an increasing body of knowledge which shows how children's play relates to learning and development. Play in African societies just like other parts of the world has been heavily associated with indigenous or traditional games or locally familiar

games to a community (Wadende et al., 2016). Indigenous games or traditional games are games, songs and play activities that are native to a locality or area (Moloi, 2020). As children play, different traditional games, learning takes place and skills are acquired by children (Tachie & Galawe, 2021). Depending on the type of game, the skills or concepts acquired academically also vary (Kejo, 2017; Nxumalo & Mncube, 2019; Wadende et al., 2016). It is interesting to note that play is heavily connected to cognitive development as well as other developmental milestones needed for a child's holistic development as shown by various scholars. This entails that teachers should not underestimate the importance of using indigenous games in their lessons.

In Zambia for example, children play traditional games such as *chiyato or chiyenga, pada, wider* and *nsolo* (Munsaka & Kalinde, 2017, p. 62) during their play in the community. It is interesting to learn that educators have not paid serious attention to the value that is in indigenous games. Similar games are known to be played in Uganda (Ejuu, 2019), South Africa (Nxumalo & Mncube, 2019; Ogunyemi & Henning, 2020), and Zimbabwe (Madondo & Tsikira, 2022), but are significantly ignored in Zambian early childhood education centres as shown by Mwanza-Kabaghe et al. (2015) and Lungu et al. (2021) who found teachers using didactic teaching methods that are only appropriate for primary school learners in ECE classes. This study advocates for the appropriate use of indigenous games in preschool lessons in Zambian schools in order to obtain similar learning outcomes as the ones presented in studies conducted in Uganda, South Africa and Zimbabwe.

In view of the foregoing, traditional games are particularly of interest in this study as they are a cornerstone of envisaged learning in early childhood, especially in rural and poor urban African neighbourhoods that cannot afford expensive toys that are unfamiliar to the children of these communities. This knowledge is of significance to learners and the communities they live in as it helps children learn to cooperate with others economically and socially for sustainable development, as well as promoting skills development of all domains (Smith, 2017; Wadende et al., 2016). Hence, for active learning to occur and the development of children's skills, teachers should prioritise incorporating indigenous games into their diverse classes. The next section discusses traditional games that support the acquisition of emergent literacy.

### **2.3.1 Indigenous games: Emergent literacy skills development**

Emergent literacy was introduced by Marie Clay at the time when she discovered that children begin to use language as soon as they are introduced into the environment and long before they enter school (Jahnke, 2019). According to Jahnke (2019), emergent literacy is defined as “reading and writing behaviour that precede conventional literacy” (p. 21). The reading and writing behaviour or emergent literacy does not end with a child entering school, it prolongs throughout preschool and primary school until a child masters the skill of reading and writing with little or no difficulties at all (Norling et al., 2015). According to Norling and Lillvist (2016), children start engaging themselves in language and literacy knowledge from the time they are born. Research shows that children’s emergent literacy skills include aspects such as oral language, phonological awareness, print knowledge, and identifying letters, sounds and words (Kenanoğlu & Duran, 2021).

Literature has suggested that there is a strong connection between the child’s ability to read and write at a tender age and the socio-economic status of the family such a child is born into (Jahnke, 2019; Kenanoğlu & Duran, 2021; Parker et al., 2022). Children born from poor families or low-income communities are at risk of not acquiring emergent literacy skills as they have little or no awareness of print material such as picture books that are readily available in urban and affluent families (Kenanoğlu & Duran, 2021; Munsaka & Kalinde, 2017). Such inequalities make it challenging for children growing up in rural communities such as Chibombo District in Zambia without electricity, sometimes no phone network and long distances to preschool centres. For this reason, educators and parents in rural communities and low-income communities should endeavour to make good use of indigenous games that are at their disposal in their communities. In this regard, the researcher argues that indigenous games should be used appropriately to enable children to acquire skills such as sounds, phonological awareness, phonics, speech development and sentence construction.

### *2.3.1.1 Games and emergent literacy*

Indigenous games have for a long time played a very pivotal role in helping children acquire emergent literacy skills as well as other developmental milestones at an early age (Madondo & Tsikira, 2022; Matafwali & Mofu, 2023). Sulistyaningtyas and Fauziah (2019) argue that traditional games played by children can improve language development that “encourages the use of new vocabulary [including enhancing the ability for] children to socialise with others” (p. 432). Socialisation in this regard plays a very important role in helping learners acquire emergent literacy skills useful for the current and future education of children.

Evidence of acquisition of emergent literacy and other skills in children through traditional games can be seen from Ghana (Acharibasam & McVittie, 2020) Kenya (Ng’asike & Swadener, 2015), Uganda (Ejuu, 2019), South Africa (Moloi *et al.*, 2021), and Zimbabwe (Madondo & Tsikira, 2022) as well as other indigenous communities such as those in Indonesia (Hafina *et al.*, 2022), Turkey (Kenanoğlu & Duran, 2021) and New Zealand (Ramayenda, 2020). Traditional games that are accompanied by dancing and singing are of interest in this study as they promote emergent literacy in children.

Children are known to often identify environmental print such as labels on shops, streets and food outlets even before they begin to recognise written print material (Parker *et al.*, 2022). In Zambia for example, urban children can easily identify certain prominent food outlets such as ‘Hungry Lion’, ‘Shoprite’ and ‘Choppies’ by following the shape, colour and features that are familiar on the food items or play items purchased from such shops. Jahnke (2019) supports this argument by showing that, when teachers and significant others support the development of literacy skills of children in preschools by using familiar objects and items for learning, children are poised to become more successful in reading and writing in their future academic endeavours (p. 23). I argue that the familiar items and objects should then be those in the environment such as posters, books in homes, if available and oral language that can be promoted through traditional games and songs for a community, as the next section will show.



### 2.3.1.2 *Play and emergent literacy in ECE classes*

Play and learning in early childhood classes have been cited as two components that can improve learner achievement in schools if well applied. Educators, policy makers and researchers have continued to urge governments to implement learning through play in all teaching and learning programmes for ECE classes. In Zambia, a few studies have emerged in the last eight years on the importance of applying play-based learning in early grades such as ECE. Among the few, Serpell (2019), has shown serious impediments that teachers face in implementing appropriate teaching and learning strategies that support early childhood learners. Mwanza-Kabaghe *et al.* (2015), for instance, found that teachers in Lusaka, were unable to teach using ECE teaching strategies because teachers were ill-trained and unqualified for ECE. Lungu and Matafwali (2020b), equally found that teachers were aware of the importance of teaching using play-based approaches but lacked skills and knowledge on how to use this approach in their lesson delivery. Therefore, this study endeavoured to engage teachers and implore them to use indigenous games due to the potential benefits that are embedded in them when applied appropriately.

As argued by Parker *et al.* (2022, p.1), the children's ability to "learn through natural enquiry process of play" in the early years of schooling cannot be overemphasised. It is vital to note that deprivation of play in children can seriously affect child development including weaknesses in the ability to solve classroom problems that affect learning and socialisation. This demands for lessons that are designed to apply skills and strategies that energise learners and teachers to engage in play-based teaching methods. Kejo (2017) emphasises and agrees with Parker *et al.* (2022) that play-based teaching methods should be those that use indigenous knowledge that is entrenched in a community where the school is located.

As earlier stated, research suggests that play and literacy are not mutually exclusive, but rather interlinked (Jahnke, 2019). Clarke (2020) also argues that the need for children to actively engage in play right from the time they are born cannot be overemphasised. This requires that games played are indigenous in nature and familiar to children in a society. As children play, emergent literacy skills are also acquired including other developmental domains such as gross and fine motor skills

which this study is advocating. I agree with Pyle and Daniels (2016) who add that play-based learning should be one that meets the needs of children both developmentally and academically. As such, through play-based learning, literacy skills should be developed and enhanced for current and future education endeavours of children in preschools using indigenous games.

Literacy is a vital aspect of education and learning in any education system. Lungu and Matafwali (2020) argue that children are expected to learn how to read and write by the time they reach primary education. The learning of reading and writing skills should therefore start at an early age, preferably while a child is in the womb. Emergent literacy is expected to prepare learners for the huge task of reading, writing and success at higher level of education in future, that is, primary, secondary and tertiary education (Parker et al., 2022; Pyle, Pyle, Prioletta & Alaca, 2020). The literature suggests that learners who engage in games that involve scribbling, vocalisation and singing, become better writers, speakers and confident than their counterparts without such exposure during childhood. For this reason, the researcher believes that advocating for use of games from an early age, especially indigenous games that are familiar and available in rural communities is paramount to children's ability to successfully become literate before entering primary school level.

Scholars have suggested games and methods that teachers can use in schools in order to enhance the acquisition of literacy skills as well as overall cognitive development in preschool learners. The suggested games and methods include songs such as the one used to teach letters of the alphabet (Mulenga et al., 2021). According to scholarly evidence, the effectiveness of the 'a', 'b', 'c', 'd', 'e', 'f... song in teaching all the twenty-six letters of the English alphabet might not seem apparent (Kalinde, 2016). However, songs are known to help children learn the alphabet much quicker and easier in a funnier and more enjoyable manner as seen in studies by Ejuu (2019) and Kalinde (2016). Songs and games indeed support the development of positive peer relationships and all developmental domains in children which this study promotes.

Emergent literacy remains a key component of any early learning programme that children undergo throughout their preschool years and primary education. It is the future of educational achievement that an individual can aspire for (Jahnke, 2019). Emergent literacy requires the use of games for the development of skills useful for future education prospects (Kenanoğlu & Duran, 2021). Key skills that make-up emergent literacy is “oral language, phonological awareness, letter recognition, vocabulary skills and print concepts” (Clark, 2020, p. 4). Teachers should in this respect, be given time to plan lessons that would make it easy for them to enhance the acquisition of emergent literacy skills using traditional games. When such lessons are planned and used correctly, the results can be interesting.

The unfortunate part is that most school administrators, parents and other education stakeholders put teachers under immense pressure to have all children learn the letters of the alphabet, rhymes and phonemic awareness within months of being enrolled in schools without regard to stress on children (Clark, 2020). This leads to significant reduction in the time that teachers can plan and allow play, especially free play, to take place in schools (Bruce, 2018; Bodrova & Leong, 2015; Grindheim, 2021). It should be noted that allowing free play and guided play (Bruce, 2018) using familiar games would lead to significant achievement of learning outcomes such as children acquiring emergent literacy skills by the time, they graduate to Grade 1. Weyer and Casanres (2019, p. 1) add that children who usually drop out of school in high school are mostly those who were found to be “non-proficient in reading by the end of the third grade”. It is vital therefore, that traditional games are applied from the onset of preschool for children to acquire this important skill before they reach 6 years of age or before entering primary school.

As earlier alluded to by Jahnke (2019), literacy skills are the “foundation for children to acquire knowledge in content areas” (p. 23). Teachers can support this aspect by including literacy activities that are practical and locally familiar (Matapo, 2021) in all lessons or indeed daily routines. The weekly forecast, for example, can have as many traditional games as possible that support the acquisition of literacy skills (Bruce, 2018; Clark, 2020). In fact, it is also argued that through the planning for so many literacy activities in preschools, teachers can teach several other aspects of

the school curriculum (Nxumalo & Mncube, 2019) such as mathematics, social studies and expressive arts among others.

A study by Grindheim (2021) on children in Scandinavia revealed that outdoor play-based learning is the most popular among children as they feel free from adult dominance. Bruce (2018) equally elucidates how children feel when they are allowed to make their own decisions on what to do and what not to do. Children feel comfortable when adults around them give them an opportunity to be deciders in play activities, thereby leading to higher levels of achieving desired learning outcomes (Clark, 2020). The same is true, in preschool centres across Africa, as children like to explore their environment (Ogunyemi & Henning, 2020; Tachie & Galawe, 2021). It is for this reason, that local and familiar games have been championed in this current study as a pinnacle of fruitful learning for preschool learners in Zambia. Outdoor play-based learning can be taken into cognisance by the teachers in various centres as they make children to become independent. As children interact freely, their language develops.

Lungu and Matafwali (2020b, p. 357) sum it up by arguing that all “language games” and indeed any other games that support emergent literacy should help learners to develop academically, socially and emotionally. This suggestion by Lungu and Matafwali (2020) is also supported by Banda and Banda (2016), Kenanoğlu and Duran (2021), and Parker et al. (2022) who posit that all games, including traditional games, that children in preschools are engaged in should promote the acquisition of literacy, social and motor skills including learning of early childhood mathematical concepts that the next section delves into.

### **2.3.2 Indigenous games: Early childhood mathematics**

Early childhood mathematics or pre-mathematics is one of the key components of learning that takes place in preschools in Zambia as provided for in the national syllabus and curriculum for the Ministry of Education (MESVTEE, 2013/2014). The Ministry of Education strongly believes that for children to develop cognitively, the pedagogical approach to be used in schools should be well-defined (Nakawa, 2020). The national curriculum framework of Zambia has stipulated the pedagogical approach that all schools are required to implement (MESVTEE, 2013/2014).

According to Nakawa (2020), the Ministry of Education policy on early childhood mathematics and indeed other learning areas such as social studies, language and literacy, expressive arts and environmental science must be taught through play-based strategies. The argument from scholars is of great value to me as I equally agree that teaching mathematics through games to preschool learners would be ideal as children love play. I also argue that numeracy skills such as counting, and sorting can easily be taught while learners are playing rather than using conventional methods that sometimes intimidate the learners.

Preschools countrywide are thus expected to apply teaching approaches that would promote the acquisition of mathematical concepts through play. The curriculum and syllabus spell out how mathematics should be taught in schools (MESVTEE, 2013/2014; Nakawa, 2020). The national curriculum framework has emphasised the need to have all learning in a playful manner considering the efficacy of this approach and the results it has shown in countries where play-based teaching and learning have been implemented successfully. However, the application of teaching and learning methods stated in the curriculum is a matter that begs for serious discussion among stakeholders in early childhood education as most teachers fail to apply learning through play approaches as evidenced from studies Mwanza-Kabaghe et al. (2015) and Nakawa (2020).

Vogt et al. (2018, p. 589) argue that “early mathematical competencies are highly relevant to later education outcomes” for children throughout the academic pathway. It is, therefore, vital to state that the development of skills in mathematics for children in their early years needs due diligence and careful planning by all actors in education. One of the ways of enhancing the acquisition of early mathematical competencies is by applying traditional teaching methods using local games as a foundation for early education outcomes. This study supports this approach as it provides early learning opportunities that would be playful, engaging and interactive in nature. In addition, the study posits that learners are likely to feel at ease when learning mathematical concepts such as measurements if the teaching approach uses familiar games that the children play at home.

The Ministry of Education in Zambia recognises the importance of developing mathematical competencies in ECE right from the start of schooling (Nakawa, 2020). However, the matter that solicits sombre interrogation is the pedagogical approach that would bring the best outcomes in learners. As noticed by Tachie and Galawe (2021) in South African schools, the use of Eurocentric teaching methods has not been of great help to children in primary and secondary schools for indigenous African learners. In Zambia, Nakawa (2020, p. 3) learnt that “preschool teachers were able to use different types of traditional games/guided play activities, but lacked, activities that were mathematics-focused as they implemented learning through play”. Most activities that teachers gave their learners in Zambian preschools were general in nature without a specific focus on mathematical competencies and concepts that are in the curriculum (Nakawa, 2018; 2020). The limitation of most teachers stems from their inability to innovate and create materials and learning environment that use traditional games to support the development of specific mathematical skills. The researcher concluded that the reason for this limitation seems to stem from the type of training they underwent which lacked pedagogical approaches for ECE.

Research has further shown that teaching and learning mathematical concepts using curriculum developed using a Western eye does not motivate learners to engage in meaningful knowledge creation from an early age (Madondo, 2022; Moloji, 2020; Moloji et al., 2021; Tachie & Galawe, 2021). It therefore becomes logical to argue that curricula and syllabi in African countries need to be reoriented to respond to the needs of societies that they hope to serve by involving experts who understand societal needs of each traditional society. This would lead to decolonisation of the curriculum (Nxumalo & Mncube, 2019) by incorporating indigenous games in the teaching of specific early mathematical concepts leading to the development of numeracy skills in children.

According to Nakawa (2020), the aim of pre-mathematics or early childhood mathematics is to promote the development of “children’s mathematical knowledge, skills and values” for use in their daily livelihoods. Teaching and learning of mathematical competencies should be through the manipulation of objects in a practical manner as espoused by Moloji (2020) as well as Nakawa (2020). This can

take the approach of selecting specific traditional games that are well known to learners and that can be used to teach algebra, numbers, geometry, measurements and commercial arithmetic as guided by scholars. I endorse Nakawa's (2020) and Moloji's (2020) suggestion that early childhood mathematics be promoted through hands-on item manipulation. It is for this reason that agree that for children to develop mathematical knowledge, abilities and values, early childhood educators must stress the value of experiential learning.

Traditional games can, by and large, be used by educators in preschools to teach early mathematical competencies and or concepts to children (Hunter & Hunter, 2018; Smith & Chao, 2018; Vogt et al., 2018). As children play, they do not realise that they are also learning, thereby achieving a threefold success story in ECE classrooms (Hunter & Hunter, 2018; Parker et al., 2022). Learners also acquire cultural knowledge as well as learning to socialise with their peers from different cultural backgrounds without prejudice (Ng'asike & Swadener, 2019; Tachie & Galawe, 2021). Most importantly, children learn skills that are useful for the rest of their lives as they engage with others in the communities of abode. The success of the play-based approach to teaching of early childhood mathematics largely depends on the skills and perceptions that teachers have of mathematics (Anders & Rossbach, 2015; Hunter & Hunter, 2018; Smith & Chao, 2018). The strategy assists children in gaining socialising skills and cultural understanding in addition to mathematical ideas. This highlights the value of an all-encompassing educational strategy that incorporates social interaction and cultural awareness in addition to academic study. The section that follows discusses teacher perceptions of pre-mathematics or early childhood mathematics in schools.

### **2.3.3 Teacher's perceptions of pre-mathematics**

Play in early childhood classrooms around the world is seen by educators as vital for teaching various subject areas including science, emergent literacy, social studies, expressive arts and mathematics (Hunter & Hunter, 2018; Wirdze, 2021). The way teachers or educators perceive the teaching of pre-mathematics through play-based teaching methods to early childhood learners has generated mixed feelings (Anders & Rossbach, 2015; Hunter & Hunter, 2018). Some teachers hold the view that pre-mathematics should be taught in more conventional methods for learning to take

place (Anders & Rossbach, 2015; Nakawa, 2020; Wirdze, 2021). This characterisation of teaching of pre-mathematics and indeed mixed feelings is largely on personal beliefs and ideas rather than on research as demonstrated by Anders and Rossbach (2015). In the teaching of pre-mathematics, both traditional methods and play-based approaches are essential.

Anders and Rossbach (2015) for example, argue that teachers might not be very enthusiastic about teaching mathematics to preschool children through play-based methods because of their own feelings and attitudes especially if they experienced mathematics negatively during their own education process. Other educators might feel that mathematics has no fun part as it is usually associated with problem solving in a didactic manner (Hunter & Hunter, 2018; Vogt et al., 2018). In fact, according to Nakawa (2020) who studied mathematics education in Zambia, most teachers, do not take keen interest in developing lessons that are playful in nature so that learners are captivated to learn mathematics at an early age. Research shows that teachers are still struggling to understand how children in Zambia learn mathematics as few studies have been conducted to explain this aspect in the country. Therefore, this study comes in handy in suggesting ways of teaching mathematics to preschool learners.

The current study argues that teachers in ECE classrooms need to take time to prepare and create teaching tasks that call for learner engagement in mathematical computations or problem solving as they play. Smith and Chao (2018, p. 5) believe that as children experience mathematics in day-to-day lessons, they create for themselves “authentic spaces, contexts and conversations” that can be used to solve or deal with important and vital issues that affect child development. Children’s interests and materials that are made available for teaching and learning thereby play a vital role in uplifting teacher views on the successful use of traditional methods in teaching mathematical concepts in ECE learning environments (Smith & Chao, 2018; Vogt et al., 2018; Wirdze, 2021). This study finds value in scholarly evidence and arguments that when the teaching and learning environment is conducive for learner achievements in early childhood mathematics, the likelihood that children fall in love with learning pre-mathematics is very high. The researcher therefore urges



teachers to use initiation and creativity in preparing lessons that are involving and stimulating for children by using traditional games.

Tachie and Galawe (2021, p. 4350-4351) have highlighted aspects that have affected the performance of children in the acquisition of mathematical concepts in rural South African schools. Among issues that emerged in the study by Tachie and Galawe (2021) was the use of foreign or Eurocentric teaching methods that seemed to be more likeable by teachers in the education system as opposed to indigenous teaching approaches. It is my shared view that Eurocentric teaching approaches tend to undermine the use of indigenous teaching methods such as use the of traditional games when teaching mathematical concepts. The argument by several scholars with whom I agree has been that teachers are untrained in using traditional methods and that they do not find them appealing to learners (Tachie & Galawe, 2021). As such, I argue that teacher training institutions need to innovate and ensure that the ECE training programme captures indigenous knowledge such as the use of traditional games in lesson delivery. There are also other concerns about the possible negative effects of Eurocentric teaching methods. I strongly emphasise the need to shift towards incorporating indigenous teaching styles to advocate for a more inclusive educational approach. Furthermore, it would be important to emphasise the value of traditional games as effective mediums for teaching mathematical concepts, especially in the context of Africa's distinct cultural and educational traditions.

#### **2.3.4 Approaches to pre-mathematics teaching and learning**

The play-based approach in teaching various learning areas of ECE or ECD invites several suggestions on appropriate practices. It is vital that teachers are aware of the knowledge that children bring into the classroom from home where they begin applying numerical skills on several issues long before they enter preschool. According to Munsaka and Kalinde (2017), “children use various numeracy strategies [from an early age such as] seriation, patterning, measurement, geometry and number concept” (p. 82) in their daily activities. Children start arranging things such as toys, cups and other items at home from age two or less and continue doing so into their formative school years. On the other hand, children who come from poor families are frequently exposed to nature and outdoor environments and might use sticks, stones, or other natural objects in their play. This study agrees with other

scholars that as children arrange various play items, and objects in their homes, and engage in nature and outdoor environments, the concept of numbers begins to develop and get engraved in their minds.

Considering the importance of mathematics in education from elementary to university, it is vital that teaching of pre-mathematics or early childhood mathematics is enhanced from an early age (Nakawa, 2020). This entails adopting approaches that support learning and are easier to use by teachers in their planning of lessons daily. Teaching and learning approaches would require teachers or educators to make decisions on whether to provide an “instructional programme or free learning environment or focusing on domain-specific competencies or indeed on a broader approach” on mathematical skills acquisition (Vogt *et al.*, 2018 p. 591). Play in teaching early childhood mathematics therefore becomes a vehicle for appropriate and innovative teaching approaches, as suggested by Smith and Chao (2018), Tachie and Galawe (2021) and Wirdze (2021).

Smith and Chao (2018), Hunter and Hunter (2018), and Nakawa (2020) suggest that innovative approaches to early mathematics are more poised to use play, such as role-play, pretend play and board games to develop children’s mathematical competencies. In traditional societies however, games can have several uses, such as, fun, learning social life, health living, respect for adults, oral language and indeed, counting and measuring things. This is in line with the argument advanced by Moloji *et al.* (2021, p. 242) that mathematics is a “human activity that aims [at building] relations between physical and social phenomena [as well as] mathematical objects”. This means that, even rural children including those from poor communities such as Chibombo District in this study and in urban areas can learn mathematics through traditional games as these are deep-rooted into social and physical activities engaged in daily. I argue that schools should ensure that games designed for play and fun including cover aspects that support obtaining of desired learning outcomes for each lesson.

In view of the foregoing, Gasteiger, Obersteiner and Reiss (2015) identified aspects that are cardinal to play-based approaches for early childhood mathematics lessons. The identified aspects include ensuring that the content that needs to be taught to

learners in a lesson is covered in the game, is presented accurately, promotes further learning and is appropriate for children's learning trajectory (Gasteiger et al., 2015, p. 233). Teachers are encouraged to use an array of teaching methods in order to enhance learning in learners. The researchers suggests that teaching methods and strategies such as *board games*, *Kgati* (a rope-jumping game), and *pada* (a game where a court is drawn on the ground with numbered boxes in increasing order) among others that have been discussed heavily in this study can make a good resource for teaching mathematics to early childhood learners.

The approaches proposed by Gasteiger et al. (2015) show that the concept of play is usually used differently by different educators and as such each teacher needs to be sure that the games used in teaching early mathematics are helping learners acquire certain specific mathematical concepts (Madondo & Tsikira, 2022) as opposed to being used only for entertainment or fun (Smith & Chao, 2018; Wirdze, 2021). Learning through play therefore helps teachers and learners to workout methods of achieving intended goals without anyone of them losing focus along the way (Hunter & Hunter, 2018; Parker & Thomsen, 2019; Parker et al., 2022; Wirdze, 2021). The researcher is of the view that adopting and promoting learning play in ECE can allow all parties involved in education to put play and learning in its right place without disturbing one at the expense of another.

In ensuring that real learning takes place in classrooms, Munsaka and Kalinde (2017, p. 83) advise that "children can be divided into groups of 4 or 5 learners and given tasks of sorting locally familiar objects into categories of similarity" until the skill has been fully mastered. The teacher should, however, be careful to avoid "taking over" the activity in case learners seem not to capture the required skills early enough (Munsaka & Kalinde, 2017). Madondo and Tsikira (2022) also suggest that through playful tasks such as the one presented by Munsaka and Kalinde (2017, p. 83-84) of sorting objects, children can support each other's learning by "bridging the gap between fast and slow learners" without so much struggle, a view I fully support.

Moloi et al. (2021) suggest that sorting and classification tasks such as putting bottle tops of the same colour together, stacking sticks of similar length on one hip and putting stones of similar shape and size together can be organised or prepared by

the teacher and used in any lesson anywhere regardless of the socio-economic situation of a particular area or school. This is because such activities do not require any sophisticated materials to be used in the lesson. According to Munsaka and Kalinde (2017, p. 83), rural ECE centres, for instance, can look for materials of “different shapes such as squares, rectangles, spheres and cylinders made from clay” for learners to use in a classroom activity. The researchers argue that the materials can be made at no financial cost. However, what would be required, would be support from community members such as parents in providing clay for children to use in making various objects as encouraged by this study.

Traditional games such as *chiyato* (a game of mathematics usually played by children for leisure on the ground) and *nsolo* (two-player mathematical board game played on the ground) (Lungu & Matafwali, 2020b) as well as *pada* (Tachie & Galawe, 2021) and *morabaraba* (Moloi, 2020) are also very good examples of what teachers can use in teaching numeracy skills such as number concept (Tachie & Galawe, 2021; Moloi, 2020). In these traditional games, stones, sticks and strings or ropes are used to enhance learning of mathematical concepts of quantity, balancing and measurements in early childhood learners both in urban and rural schools, including in affluent communities. As a matter of emphasis, these games require little or no financial capacity to collect and use them in lessons as observed by scholars such as Moloi et al. (2021) and Ogunyemi and Henning (2020). I equally support the statement considering my experience of playing games such as *pada*, *nsolo* and *cidunu* during my childhood in a rural area and seeing my children playing using local materials today without any monetary costs.

Other activities that can be used in teaching numeracy skills or pre-mathematics are *songs*, *skipping* and *clapping* games accompanied by dances. Traditional music can also play a big role in enhancing learning in early childhood classrooms (Mulenga *et al.*, 2021). This is because music allows learners to actively participate in singing and clapping, while counting, thereby exposing learners to skills of additions, subtraction and division among others. The unfortunate part when it comes to “music as an education tool” as expressed by Mulenga et al. (2021, p. 54) is the “little or no support from education stakeholders” on its importance in enhancing learning in Zambian schools. The concern is also shared by other scholars such as Kalinde

(2016) who laments in a similar way on the lack of music education in ECE curriculum in Zambia. The researcher therefore supports the need for inclusion of this important aspects of teaching and learning in ECE using songs, games and play in lessons especially the use of indigenous songs, games and play.

By advocating for the use of traditional games in teaching various aspects of ECE (Madondo & Tsikira, 2022), this study is not in any way suggesting that all other “direct methods of instruction” (Munsaka & Kalinde, 2017, p. 84) in early childhood lesson delivery be abandoned. On the contrary, the study is advocating for the use of direct methods of instruction in a play-based approach using indigenous games that are familiar to the learners of a community (Moloi et al., 2022; Tachie & Galawe, 2021). This is encouraged by this study as play remains the most natural preoccupation for children of both rural and urban communities including disadvantaged children such as those living with disabilities, children in conflict environments, those in detention facilities and low-income communities.

It is important that early childhood educators quickly realise the need for them to take full advantage of children’s desire to play and make good use of play activities to teach specific skills such as mathematical concepts (Madondo & Tsikira, 2022; Moloi et al., 2021). Unfortunately, research in South Africa (Tachie & Galawe, 2021), Zambia (Mwanza-Kabaghe et al., 2015; Nakawa, 2020) and Zimbabwe (Madondo & Tsikira, 2022) shows that a few or no teachers make good use of this opportunity of using playful teaching methods and indeed traditional games when delivering ECE lessons. Therefore, this study is encouraging the use of traditional games or indigenous games in enhancing early learning in Chibombo District of Central Province, Zambia. Traditional games, when used properly for a specific focused developmental domain, can bring about cognitive and social development in children as discussed in the next section.

#### **2.4 TRADITIONAL GAMES: COGNITIVE AND SOCIAL SKILLS DEVELOPMENT**

Traditional games are said to have a strong impact on cognitive and social-emotional skills development in ECE learners up to primary education and beyond (Moloi, 2020). As children play, they experience changes in their feelings towards others, including inner self, which leads to intellectual, physical, social and moral

development (Bruce, 2018). Hunter and Hunter (2018) posit that cognitive and social development is the process that shows how children develop the ability to think and socialise. Cognition essentially incorporates each mental procedure that might be depicted as an affair of knowing (counting, seeing, perceiving, considering, and thinking) and recognising things (Vygotsky, 2016). Munsaka and Kalinde (2017) argue that, cognitive and social development is the description of how “children develop the ability to use their mental faculties to make sense of the environment around them” (p. 60). The environment includes people they interact with who include family members and peers, and the school and what is found in it such as rural communities like the ones in Chibombo District where this study was conducted.

Parker et al. (2022) add that play exercises offer numerous open doors for controlling, investigating and honing, and are hence profoundly suggested as a road for cultivating the intellectual skills of youthful children. This is the more reason why scholars advocate that ECE emphasises the use of playful pedagogy especially one that uses indigenous games that are familiar to the learners (Nxumalo & Mncube, 2019). Through play, children should acquire information and skills that are crucial to their cognitive and social development.

Research has shown vividly that active play in children provides enormous benefits that are necessary for cognitive development (Madondo & Tsikira, 2022; Tachie & Galawe, 2021). Madondo and Tsikira (2022) have identified the benefits of active play as including learning new vocabulary, problem solving, decision-making, critical thinking and imagination. According to Parker et al. (2022) play is hugely influential in the development of a child as it helps in “fostering speech development, cognitive processing, self-awareness and self-regulation” (p. 1). It is also known to heavily support socio-emotional learning, creative thinking, global competence, innovation and physical development as a measure of holistic skills development in children.

Since play is sometimes a “complex and difficult [phenomenon]” to define (Parker et al., 2022, p. 2), it gives room to anti-play-based learning advocates to contest the very essence of learning that is assumed to take place in ECE classrooms where this approach is used (Madondo & Tsikira, 2022). Some scholars argue that play

remains a “non-serious and non-work-related”, and as such cannot yield good results in schools where teachers are “accustomed to more rigid curricula structures and attainment targets” (Parker et al., 2022, p. 2). According to Parker et al. (2022), play is said by anti-play-based learning advocates to only promote fun and enjoyment for learners. However, it is important to state that play is only considered non-serious and non-work-related when the teachers exhibit extreme limitations in its application in their day-to-day teaching processes.

As shown by Lungu and Matafwali (2020), most ECE centres in Zambia are preoccupied with activities that seem to foster cognitive development and are usually summarised into literacy and numeracy skills development through didactic teaching approaches. In fact, Munsaka and Kalinde (2017), also argue that parents equally measure positive child development if they notice that their child can read and write without difficulty as soon as they enroll in preschool. In addition, children are also able to decontextualise the meaning of something by clearly treating substitute objects as real objects (Parker et al., 2022) during play thereby showing their level of cognition. This is seen in children’s use of any object around them as though it were a car without allowing any external realities to hinder their play (Munsaka & Kalinde, 2017). This push for children to acquire cognitive skills such as reading and writing at all costs without allowing play to take its course has serious ramifications on the development of children. This study does not support educators and scholars who argue for conventional teaching approaches that discourage learning through play approaches. This is because the values of play and learning in children are highly appreciated by the researcher.

To show that children are not only stimulated by Western or Eurocentric play materials (Madondo & Tsikira, 2022; Mloi et al., 2021) such as video games, puzzles, brain teasers among others, traditional games (Tachie & Galawe, 2021) can enhance cognitive development as well. The games of *chiyato*, *pada* and *nsolo*, for instance, presented earlier in this chapter show that children who engage in these types of traditional games significantly improve their cognitive skills. The researchers agree that traditional games such as the ones stated above involve high level use of numbers, counting, measuring and balancing as the games are played. Also vital in

these games are accuracy and consistency which are highly cognitive in nature and promoted in this study.

The evidence that has been presented above has shown that traditional games can indeed enhance the development of cognitive skills in children of preschool age if well applied. Scholars such as Lungu and Matafwali (2020b), Moloji et al. (2021), Madondo and Tsikira (2022), as well as Munsaka and Kalinde (2017) have given strong evidence and guidance on what games to play and how the games can bring about cognitive development. As Munsaka and Kalinde (2017, p. 66) suggest, it is the role of a teacher to look at the environment he or she is working in and use appropriate games that are known to the learners of that locality. It would be unfair to children of affluent communities to be subjected to traditional games that would be unfamiliar to them when they are more familiar with computer games and puzzles (Madondo & Tsikira, 2022). The same is true of rural children such as those in Chibombo District who might not have access to Television and later required to play computer games as shown by children of rural Zimbabwe studied by Madondo and Tsikira (2022). Traditional games would, therefore, be appropriated for learners in rural areas as they are familiar with such games in their community from childhood. Since traditional games are played physically, they also support the development of physical skills in children as shown in the proceeding section.

## **2.5 TRADITIONAL GAMES: PHYSICAL SKILLS DEVELOPMENT**

Traditional games have a strong connection to the development of physical skills in children (Smith, 2017). Tatira (2014, p. 156) discovered that children enjoy play that involves games that have an aspect of performance and entertainment. It is further argued that games such as traditional Shona games (Tatira, 2014) bring out important aspects of life that sharpen cognition, including the physical fitness of the children. As children engage in various forms of play, they develop both fine and gross motor skills that are useful for daily activities.

Munsaka and Kalinde (2017, p. 52) have shown how play in its many forms allows children to integrate different types of learning. Children work with peers and adults in the classroom and outdoors in active play which enables learners to develop increased strength and dexterity which is required for more complex activities. A



child's development of physical skills – gross motor and fine motor skills - helps build confidence and self-concept in children (Matafwali & Mofu, 2023). Traditional games therefore play a pivotal role in fostering physical development as most of them require physical activities to play them. As such, traditional games are very ideal for rural areas and poor urban communities that cannot afford to buy play equipment such as swings and Mary-go-round that are in contrast to local games such as *wider*, *pada* and *skipping* that are free of charge (Madondo & Tsikira, 2022).

Ejuu (2019) discusses indigenous games that Ugandan children play and are of no financial cost to the communities. The indigenous games discussed by Ejuu (2019) are heavily connected to Nsamenang's (2013) sociogenic process, that guide the expectations of the community from children's developmental stages through cultural tasks suggested by scholars such as Kejo (2017), and Robertson (2016). Traditional games such as *sokoto* (like American baseball) and *changachanga* (a game of running and sneaking on the pitch to avoid being touched by opponents) (Ejuu, 2019) help children to be actively engaged in physical play that strengthens their muscles and fitness. This study therefore advocates for indigenous games due to their ability to not only develop cognitive, linguistic and social skills, but rather, their ability to build fine and gross motor skills in children.

Since the game of *changachanga* involves running and sneaking on the pitch from one end to another to avoid being caught by opponents, it helps learners build physical strength which can be used for other activities of life and schooling. According to Ejuu (2019, p. 321), "physical agility is taught through running" as fast as possible while being careful not to be caught or trapped by the opposing team. Children playing this game learn tactics of dodging, sneaking, distracting or jumping in order to escape the opposing team (Ejuu, 2019). This teaches children to prepare and be ready to escape any life-threatening situation such as abduction and harm in their playing environment or school, which I support as well.

In the traditional game of *sokoto* like American baseball mentioned earlier by Ejuu (2019, p. 321), "an individual player competes against other individuals in a group". In this game, Ejuu (2019) gives details of how it is played, including the required instruments. Ejuu (2019) further indicates that two sticks (1-metre-long batting stick

and 4cm stick sharpened at both ends) are needed. The shorter stick is placed across at the end of a channel-shaped hole carved in the ground and hurled away using a longer stick. While one player stands on the starting side of play, other players stand at a distance in front of the person hurling the short stick and must make serious attempts to catch the stick before it lands on the ground. If the other players standing in front of the one hurling the short stick catch it, the hurling person loses. The opposite is that when the opposing side fails to catch the stick hurled at them, the person who hurled it wins and points are calculated and added to him or her.

Ejuu (2019) adds that as the game progresses, it goes to the next level, where the player puts the short stick gently to allow it to spring out of the channel before hitting it in mid-air to move in the direction of other players. As it flies towards other players, they must try to catch it before it lands on the ground while it is in mid-air using their hands just like it is done in baseball. If the stick is caught by the other players in mid-air, the player loses and he or she is replaced with another player. If by chance the other players fail to catch the stick, the player must estimate the distance from the short stick to the channel in terms of the number of short sticks needed to cover that distance. In a situation where a player over-estimates the distance, the other group members then use the short stick to measure the distance to the tunnel from where the short stick landed. If the estimate was accurate or less, the number said becomes the score for the player. On the other hand, if the number mentioned goes beyond, then the player loses and is replaced by another player.

According to Ejuu (2019), the game helps learners to learn spatial relationships and catching skills. The game also teaches tact and physical skills of catching and running purposefully (Ng'asike & Swadener, 2015). Munsaka and Kalinde (2017, p. 53) encourages "parents and teachers to be cognisant of play activities" that are similar to the ones discussed by Ejuu (2019) in order to help children, attain "appropriate developmental milestones" in the physical domain. Included in activities that Munsaka and Kalinde (2017) advocate for are local building blocks made of clay or calved out of wood, kicking the ball (football), netball and jumping as some that can lead to children building agility, coordination and balance. I totally agree with

Munsaka and Kalinde (2017) because developing agility, coordination and balance in children is vital for child development.

Research has shown that children who are given an opportunity to engage in activities that promote the development of gross and fine motor skills have higher chances of doing better in highly advanced physical activities when they grow up (Tachie & Galawe, 2021; Ng'asike & Swadener, 2015; Smith, 2017; Robertson, 2016). Munsaka and Kalinde (2017, p. 54) also add that “outdoor play helps children sharpen their sensory development” because, as children participate in outdoor activities, they use physical senses that include touch, sight, hearing, smell and taste. Most importantly, outdoor activities help children to remain physically fit and avoid becoming overweight (Ejuu, 2019; Kejo, 2017).

Often, there is a growing tendency by educators and some stakeholders to think that only activities that enhance the development of literacy and numeracy skills are vital for holistic child development (Munsaka & Kalinde, 2017). Moloi *et al.* (2021) for instance, discuss the game of *Kgati*, a rope-jumping game played by children in South Africa and in other parts of the world (Ejuu, 2019; Hayati, Myrnawati & Asmawi, 2017), as being essential for learning and teaching of word problems in mathematics. An important aspect that can be derived from the game of *Kgati* is its ability to help learners develop physical skills as it involves skipping and jumping using a rope held by two people, one on each end (Madondo & Tsikira, 2022; Moloi *et al.*, 2021). This shows that, a game intended to enhance the acquisition of literacy and numeracy skills can support learners to develop physical skills unintentionally which leads to holistic child development that this study is advocating for.

In another study by Madondo and Tsikira (2022), games such as *Mahumbwe* (pretend play or imitative play), *chamuhwande muhwande* (hide and seek), *chitsvambe* (game of tag), *tsoro* (an ancient two-player mathematical board game) and *pada* (a game where a court is drawn on the ground with boxes numbered in increasing order) played in Zimbabwe including most rural parts of Africa (Kejo, 2017; Smith, 2017; Robertson, 2015; Wirdze, 2021) foster children's acquisition of mathematical and cognitive skills, also promote development of physical skills. In addition, indigenous games foster early learning, social cohesion and cultural identity

are promoted in the traditional games, as discussed by Madondo and Tsikira (2022). As a result of children engaging in various traditional games, the development of skills such as social, emotional, cognitive and physical skills is enhanced leading to higher achievements in children not only during childhood but also in later years of life.

Scholars such as Munsaka and Kalinde (2017), Ejuu (2019), Hayati et al. (2017) and Wirdze (2021) make a plea to teachers and parents to allow learners to create and co-create their own learning and learning environment that would stimulate skills development. Teachers can arrange opportunities for children to make simple objects from clay, wires and sticks (Hayati et al., 2017)); Kejo, 2017; Tachie & Galawe, 2021). The beauty about clay is that it can easily be sourced from any part of rural communities and does not need finances to acquire it (Munsaka & Kalinde, 2017). Making items or objects out of clay or indeed used and thrown-away wires can help learners develop fine and gross motor skills (Ejuu, 2019; Madondo & Tsikira, 2022). The benefits of helping children acquire gross and fine motor skills at preschool level ensures that their learning process in future grades is smooth as children would be able to write and draw without problems or with minimal limitations, a desire that is shared by this study's aims and objectives.

Traditional games as discussed thus far, have great value and benefits for children who play them and teachers who use them in teaching of preschool learners. Educational institutions such as preschools are very relevant in developing children of good character and with all the necessary developmental domains. Through play of traditional nature in schools and at home, children learn to collaborate with others and develop abilities to harmoniously interact with peers and teachers in building physical and social skills (Ejuu, 2019; Kejo, 2017; Wirdze, 2021). The responsibility therefore rests on teachers to create play opportunities for children to develop their self-regulation and social-emotional skills (Hafina et al., 2022; Munsaka & Kalinde, 2017) including physical and cognitive skills. As a result, children in Chibombo District, are also likely to benefit from traditional games that are familiar to them thereby developing their social, cognitive, emotional and physical developmental milestones. This would lead to building a society that has highly motivated and competent young adults to steer personal, family and national development.

## **2.6 GENERAL CONCLUSION**

The aim of this study was to determine the role that indigenous games play in enhancing early learning in preschool learners. Piaget (1970) and Vygotsky (1978) are credited for play pedagogy as a means of helping learners to develop holistically from an early age. Acharibasam and McVittie (2021), Kalinde (2016), Madondo and Tsikira (2022), Matafwali and Mofu (2023), Moloji et al. (2021), Nakawa (2020), Nxumalo and Mncube (2019), and Tachie and Galawe (2021) have also provided helpful insights into the use of indigenous games in teaching early childhood learners to acquire skills such as emergent literacy, numeracy skills and overall cognitive development. They studied aspects in ECE such as mathematics, socialisation, culture, and language development among others. Each study had a focus and aim to achieve in the broad early childhood spectrum. In Zambia for example, Kalinde (2016) studied cultural play songs in early childhood education, Matafwali and Mofu (2023) studied outdoor indigenous games as a resource material for play-based learning while Nakawa (2020) studied guided play on shapes in mathematics in early childhood education.

The uniqueness of this study lies in its ability to extend the applicability of indigenous games not only to cultural songs, outdoor indigenous games and mathematics education but also to the entire early childhood education sector including emergent literacy, social, cognitive and physical skills. The geographical location of this study differs greatly from previous studies by concentrating on rural schools. The sample included only teachers of ECE who were studied purely using a qualitative approach which allowed the capturing of context brought in by the teachers who had been teaching in ECE for at least four years. In addition, this study was conducted at a time when the ECE landscape in Zambia has been extended to almost all primary schools. The study emphasised the use of games in both indoor and outdoor activities to promote the acquisition of emergent literacy and numeracy skills. It has been argued that indigenous games can be used to teach any topic or lesson in ECE classrooms if teachers prepare well and apply each game appropriately.

The skills that can be obtained from using indigenous games in teaching and learning have been itemised as including cognitive, social-emotional, linguistic and

physical skills. This has been promoted and championed by means of research evidence that has underpinned the efficacy of this study. The study has mobilised knowledge necessary for supporting early learning in preschool learners in Chibombo District of Central Province of Zambia. The questions that begged for answers in this study were:

- Which indigenous games can promote the development of literacy and numeracy skills in preschool learners?
- How can indigenous games be used to promote the acquisition of literacy and numeracy skills in preschool learners?
- Which challenges do teachers face in using indigenous games in their day-to-day teaching of preschool learners?
- Which intervention measures can teachers use to incorporate indigenous games in their day-to-day teaching of preschool learners?

The questions above could not have been answered without an empirical, evidence-based and rigorous qualitative study of this nature, hence this enquiry.

## **2.7 CHAPTER SUMMARY**

This chapter has endeavoured to discuss the role of indigenous games in enhancing early learning in preschools by showing the pedagogical significance therein. Also highlighted is the vitality of indigenous games associated with play-based learning approaches. The discourse has moved around giving learners opportunities to take part in activities that support the acquisition of desired developmental milestones. Several traditional games have been discussed by showing the skills that each one of them supports in child development. The chapter has given clear explanations of how traditional games and playful learning enhance the acquisition of skills in all developmental domains such as cognitive, social, and physical aspects of development in preschool children. The next chapter deals with the theoretical underpinnings that this study was anchored on.

## **CHAPTER 3 : THEORETICAL FRAMEWORK**

### **3.1 INTRODUCTION**

The previous chapter attempted to discuss the role of indigenous games in enhancing early learning in preschools by showing the educational implication in the holistic development of children at ECE level. It also emphasised the vitality of indigenous games associated with play-based learning approaches for ECE learners. An array of traditional games has been discussed by showing the skills that children are able to acquire when used in the lessons including emergent literacy and numeracy skills. Overall, the chapter demonstrated that using traditional games or indigenous games in teaching preschool children promotes child development and achieving of desired learning outcomes in learners by teachers and educators.

This chapter discussed a major component, namely, the theoretical framework that stands as a plan through which this study was posited. The theoretical framework shows the underpinnings of the study such as indigenous knowledge systems (IKS), Piaget's theory of play and Vygotsky's sociocultural theory. The three theories are discussed as playing complementary roles in enhancing early learning in preschool learners in Zambian ECE centres. The chapter begins with a brief highlight of what a theoretical framework is and how it has been applied in this study. It continues with detailed elucidations and connections of Indigenous Knowledge Systems to pedagogy - teaching methods and learning processes in preschool learners. Further, a discussion of Jean Piaget's theory of play is brought into picture by emphasising its role in children's learning trajectory through adult and peer imitation. Finally, the chapter concludes by showing how Lev Vygotsky's sociocultural theory applies to early childhood practice in rural schools such as those in Chibombo District, Central Province of Zambia.

## **3.2 THEORETICAL FRAMEWORK: INDIGENOUS KNOWLEDGE SYSTEMS (IKS), PIAGET’S THEORY OF PLAY AND VYGOTSKY’S SOCIOCULTURAL THEORY**

### **3.2.1 Overview of theoretical framework**

A theoretical framework, as suggested by Kivunja (2018), is composed of theories that are advanced by scholars in the field where a study is situated and can be used to guide the process of data analysis and interpretation of results. Theoretical frameworks have a huge task of explaining “the path of research and [grounding] it firmly in theoretical constructs” (Mensah, Agyemang, Acquah, Babah & Dontoh, 2020, p. 54). A theoretical framework without any doubt is a synthesis of thoughts, arguments, and conceptualisations of gurus in the field of study that an individual has chosen to undertake (Babale & Lawal, 2021; Grant & Osanloo; 2014; Heale & Noble, 2019).

Grant and Osanloo (2014) make this point more vivid by stating that in any research undertaking, a theoretical framework should be a precinct and at the same time an outline for conducting empirical studies. Babale and Lawal (2021) equally add that “a frame is a design [that] warrants ontological, epistemological, analytical and philosophical approach to the entire thesis” (p. 290). According to Mensah *et al.* (2020, p. 54, 56), theoretical frameworks are key in any empirical research findings as they provide a meaningful grounding of the study into acceptance theoretical constructs. The theoretical framework therefore has a lot to do with what experts in a particular field of study suggest on the chosen problem statement, and research questions and provides a clear suggestion on how to deal with matters that are raised in a study (Mensah *et al.*, 2020, p. 56).

Scholars, therefore, are encouraged to situate their studies in theories and concepts that are theorised by well-known proponents of thoughts and fields of study (Green, 2016; Kivunja, 2018). The field of early childhood education, for instance, in studies on ‘play-based learning’ (Grindheim, 2021; Lungu *et al.*, 2021; Parker *et al.*, 2022; Pyle *et al.*, 2018) that are in ‘indigenous knowledges’ (Acharibasam & McVittie, 2021; Madondo & Tsikira, 2022; Moloi *et al.*, 2021; Nxumalo & Mncube, 2019; Smith,



2017; Wadende et al., 2016) of various communities worldwide has specific proponents of the theories or gurus of particular thoughts guiding its practice. Early childhood education or early childhood development heavily relies on scholars such as Maria Montessori, Joana Pestalozzi, Jean Piaget and Lev Vygotsky among others (Bonel & Lindon, 2014; Bruce, 2018; Lindon & Brodie, 2016; Macintyre, 2017).

In African education discourses, indigenous knowledge systems, which is composed of traditional games that are being championed for use in schools for rural and low-income communities, are supported by various scholars across the continent (Acharibasam & McVittie, 2021; Banda & Banda, 2016; Ejuu, 2019; Kejo, 2017; Madondo & Tsikira, 2022; Nxumalo & Mncube, 2019; Robertson, 2015; Serpell, 2020; Smith, 2017; Wadende et al., 2016). Moloji et al. (2021) specifically insist that African children can learn better, faster and easier if teachers embrace and use traditional games that children come with from home. Ejuu (2019) adds by supporting the use of local games well known to children of communities to teach skills that cover all developmental domains such as physical, emotional, social, moral and cognitive skills. Traditional games used in local communities such as Chibombo District have been used to help learners acquire emergent literacy and numeracy skills.

In view of the foregoing, I therefore, chose to situate this study in Indigenous Knowledge Systems (IKS) (Nxumalo & Mncube, 2019), Piaget's theory of play (Parker et al., 2022) and Vygotsky's sociocultural theory (Vygotsky, 2016) as frames that give meaning to my research. The three theories are used as a 'lens' or 'blueprint' or 'worldview' through which all decisions about the study are made and understood (Grant & Osanloo, 2014). The theories, in this case, are used to discuss the findings of the study, in an academic and scholarly manner, by applying rigour and skill (Mensah et al., 2020). The theories further help me to ensure that the study establishes orderly connections between observations (Mensah *et al.*, 2020) of the use of IKS (Nxumalo and Mncube, 2019) and play-based pedagogy (Parker et al., 2022) in early childhood classroom practice (Ejuu, 2019) as well as outcomes of the lessons.

### 3.2.2 Early childhood education practice

Early Childhood Education is by and large organised to enhance the growth and development of children's personalities in all areas of child growth of all developmental domains (Lestari & Prima, 2017). The developmental domains include, physical, emotional, cognitive, social and moral aspects of child development (Mulenga *et al.*, 2021). It is a foundation phase for all learning that allows learners from as young as 2 years of age to primary and secondary education to explore the environment and make good use of it (Lestari & Prima, 2017; Lungu & Matafwali, 2020). ECE is education provided to children from age zero to 8 years in order to foster holistic child development (Lestari & Prima, 2017; Macintyre, 2017).

Bruce (2018) and Macintyre (2017) provide an enhanced understanding of what ECE practice does in support of holistic child development. The meanings of ECE practice in child development are further concretised by Lestari and Prima (2017) who add that certain "aspects of emotional development and socialisation" play a very pivotal role in "shaping children's behaviour", which is, the acquiring of "social and emotional skills" through traditional games (p. 178). This brings to the fore some taken-for-granted assumptions of conceptualising teaching and learning in preschools by heavily relying on conventional teaching methods (Lungu & Matafwali, 2020; Mwanza-Kabaghe *et al.*, 2015; Madondo & Tsikira, 2022) while disregarding aspects of learning through play (Parker *et al.*, 2022; Pyle *et al.*, 2018) applied by using indigenous or traditional games (Madondo & Tsikira, 2022; Moloji *et al.*, 2021).

Play in early years learning is synonymous with teaching and learning as the two cannot be separated nor ignored in favour of one of the two (Parker *et al.*, 2022). It is cardinal to point out that I have not come across any single scholar who argues against the use of play in the teaching and learning of preschool children. The argument, however, is usually on how much play should be included in lessons for educators to get the desired learning outcomes (Anders & Rossbach, 2015; Bruce, 2018; Macintyre, 2017; Parker *et al.*, 2022).

A careful study of scholarly works of ECE gurus and proponents of pedagogy such as John Dewey, Maria Montessori, Erickson, Piaget and Vygotsky shows that they

all in one way or the other support “learning through play” in early childhood settings (Lestari & Prima, 2017). Montessori Education, for example, emphasises the use of ‘toys in teaching’ various concepts in mathematics and science (Bruce, 2018; Lestari & Prima, 2017; Macintyre, 2017). Other examples are seen in Piaget and Vygotsky’s scholarly works that have concretised the idea of teaching through play as they have shown how playful teaching approaches help in meeting specific learning outcomes at ECE and other levels of education such as elementary and secondary education (Bruce, 2018; Lindon & Brodie, 2016; Munsaka & Kalinde, 2017; Parker et al., 2022; Pyle et al., 2018; Vogt et al., 2018).

There is a general agreement that play offers an atmosphere that allows for an interactive, active and child-centred learning to take place in early childhood classrooms (Banda & Banda, 2016; Munsaka & Kalinde, 2017; Lungu et al., 2021; Hafina et al., 2022). In this way, children find pleasure and desire to return to school daily knowing that the activities there-in are inviting them to explore the environment and make meaningful meanings out of them. In turn, play-based learning helps children build on their experiences and develop skills that are vital in understanding and using taught content effectively throughout the lessons and beyond (Bruce, 2018). Teachers therefore are encouraged to put in a lot of effort to prepare and plan their daily lessons in order to enable the learners discover, explore, investigate, think and use materials appreciatively (Bruce, 2018; Macintyre, 2017).

Evidence from scholarly work also shows that this pedagogical approach in early childhood settings has been used in various parts of the world such as Asia (Hafina et al., 2022), Africa (Madondo & Tsikira, 2022), Europe and America (Bruce, 2018; Parker et al., 2022; Pyle et al., 2018) with success stories. Hafina et al. (2022), for instance, have highlighted how play-based teaching approaches through games helps learners in Indonesia and Africa acquire desirable societal character including developing cognitive and social skills (p. 406). Lestari and Prima (2017, p. 179) equally point out to the benefits of play-based learning through traditional games as they indicate that children in Asia are seen to easily build social-emotional skills and problems solving skills where teachers use games in their lessons.

Evidence of gains that have been made in the use of games in a play-based teaching and learning are also reported in rural schools of South Africa (Tachie & Galawe, 2021) and in Zimbabwean schools of rural settings and low-income communities (Madondo & Tsikira, 2022; Maphosa & Dube, 2021). It is interesting to see how the approaches after applying them in Zambia have brought out similar results in preschools as learnt from South African and Zimbabwean studies (Madondo & Tsikira, 2022; Tachie & Galawe, 2021) where IKS led to positive learning outcomes. It is vital to indicate the desired view to apply this type of teaching and learning that uses traditional games that are embedded in the IKS as part of ECE practice in Zambia.

### *3.2.2.1 Indigenous knowledge systems (IKS)*

Indigenous knowledge system (IKS) is a dynamic way that people who reside in a area or community theorise themselves with their environment in order to improve their daily livelihoods (Nxumalo & Mncube, 2019; Tatira, 2014; Smith, 2017). IKS is undoubtedly complex and peculiar to a community or society with its own advantages and challenges (Tatira, 2014). As argued by Wadende et al. (2016), IKS is known to add value to teaching and learning in elementary and secondary schools for poor communities than what it subtracts. In fact, Moloi et al. (2021) also find IKS to be a beacon of teaching and learning in both rural and urban schools without any doubt. Further, Ogunyemi and Henning (2020) recognise the importance of IKS in the teaching and learning of learners in Nigeria and South Africa by encouraging teachers and education stakeholders to make it a point to use traditional games in school pedagogy.

According to Smith (2017), most world populations and societies, including African communities (Nxumalo & Mncube, 2019), have neglected this aspect of using indigenous knowledge systems that are strongly entrenched in certain communities for bettering the lives of people in that vicinity. The neglect of IKS is further compounded by modern 'commercialised' and 'technolised' societies developing globally (Madondo & Tsikira, 2022; Wadende et al., 2016). This is true of the education sector that has not fully utilised IKS in teaching and learning of preschool children in both rural and urban communities in Zambia and the region at large

(Banda & Banda, 2016; Lungu & Matafwali, 2020; Lungu et al., 2021; Mulenga et al., 2021; Munsaka & Kalinde, 2017).

For learning to take place, especially in rural, peri-urban and low-income urban neighbourhoods that cannot afford Eurocentric teaching and learning materials, traditional games make very useful and effective substitutes (Madondo & Tsikira, 2022). Traditional games used in schools in Indonesia as argued by Hafina et al. (2022) were found with serious scarcity of teaching materials especially in rural areas. The lack of Western teaching and learning materials in most rural and poor communities in sub-Saharan Africa is known to lead to compromises in teaching and learning in pre-schools and primary schools (Munsaka & Kalinde, 2017; Tachie & Galawe, 2021). Madondo and Tsikira (2022) as well as Tachie and Galawe (2021) have insisted that teachers in rural areas, including those from low-income communities in urban areas can heavily rely on traditional games and produce high level learning outcomes (Nakawa, 2020) in preschool learners that they teach.

The answer to these challenges and gaps in teaching and learning skills was found in the use of IKS through traditional games as earlier postulated by various scholars (Hafina et al., 2022; Nxumalo & Mncube, 2019; Smith, 2017). As argued by Madondo and Tsikira, “teaching different skills at ECD level presents several challenges, [regardless] of the language of instruction” (2022, p. 1). The scholars encourage teachers in ECE to teach using ‘traditional language principles’ that promote the acquisition of critical skills such as emergent literacy and numeracy skills (Banda & Banda, 2016; Madondo & Tsikira, 2022; Moloji et al., 2021; Ogunyemi & Henning, 2020). It is interesting to note that traditional games, which are a subsidiary of IKS present an array of activities that children perform, enjoy and love in their day-to-day undertakings in the classroom and outdoor areas of the preschool (Lestari & Prima, 2017; Madondo, 2020; Madondo & Tsikira, 2022; Maphosa & Dube, 2021; Ogunyemi & Henning, 2020; Tachie & Galawe, 2021; Tatira, 2014).

Global actors on education have continued to emphasise the importance of IKS in the provision of education for all children regardless of the socio-economic status that learners might find themselves (Acharibasam & McVittie, 2021; Smith, 2017; Nxumalo & Mncube, 2019; Ogunyemi & Henning, 2020). According to Nxumalo and

Mncube (2019), the United Nations Declaration on the Rights of Indigenous People argues that “all indigenous individuals [including] children have the right to all levels and forms of education, [that a particular country offers to its citizen] where possible an education in their own culture” (pp. 150-106). This type of education is only possible if the pedagogical principles of a particular indigenous education are applied by educators using approaches that are understood by the members of the community (Ejuu, 2019; Ogunyemi & Henning, 2020; Smith, 2017; Tatira, 2014).

Indigenous societies around the world have observed that children learn better in schools or classrooms where teaching and learning infuse indigenous knowledge and pedagogical approaches to classroom practice (Acharibasam & McVittie, 2021; Smith, 2017). It is indeed important to note that schools in [indigenous communities] that applied indigenisation of pedagogies had interesting learning outcomes from their learners (Ejuu, 2019; Moloji, 2020; Smith, 2017; Tatira, 2014). Ejuu (2019, p. 321) for instance, in a study in Uganda, looking at the game of *sokoto* (like American baseball) discussed earlier in Chapter Two, discovered that learners were able to acquire skills of counting, measuring and general number sense including catching skills. This is similar to findings in a study by Hafina et al. (2022) in Indonesia that learners were able to acquire skills useful for character building and basic competencies of learning using traditional games. Acharibasam and McVittie (2021) also learnt that IKS is a useful tool in teaching and learning IN preschool and other higher levels of education for children in Canada and Ghana.

Ejuu (2019) further suggests that games when used in classrooms can promote “child development” as well as “children’s learning potential” (p. 320). Furthermore, through the indigenisation of teaching and learning, community values, ideals and biases can be shaped (Ejuu, 2019; Kejo, 2017; Smith, 2017). This brings to the fore how the use of locally available, familiar and known games in Chibombo District, Zambia can help to shape the children taught using this pedagogical approach to enhance early learning when applied. The learners and teachers are expected to enjoy this method of learning and teaching as it is familiar and known to the community of practice (Ejuu, 2019; Nxumalo & Mncube, 2019). With IKS in full use in Chibombo District, I hoped to see significant improvements in teacher morale and

active practice of play-based teaching approaches that use familiar knowledge of games children bring with them to school from home.

#### *3.2.2.1.1 Applying IKS in early years learning*

The influence that IKS has on education in indigenous communities has been explored by various scholars in different parts of the world (Acharibasam & McVittie, 2021; Kejo, 2017; Nxumalo & Mncube, 2019; Serpell, 2018; Smith, 2017). It is generally accepted that learning starts from the known to the unknown and that what is known is usually from within the community or society children grow up in (Ejuu, 2019; Nxumalo & Mncube, 2019; Wadende et al., 2016). In African communities, for instance, delay in education development and achievement of learning outcomes have often been attributed to the use of Western philosophies and approaches in teaching that do not support the use of local or indigenous pedagogical approaches and strategies (Moloi, 2020; Moloi et al., 2021). While Western philosophies of teaching remain useful in the modern age, their application in rural and low-income communities brings limitations to the acquisition of skills that can easily be grasped by learners due to their knowledge of local games from their communities (Ejuu, 2019; Kejo, 2017; Moloi et al., 2021; Ogunyemi & Henning, 2020).

According to Nxumalo and Mncube (2019), most communities in rural and urban areas that continue applying cultural heritage in the training of children, have observed that, “children learn in many ways, including free play” (p. 105) and faster than when didactic methods (Mwanza-Kabaghe et al., 2015) that are Eurocentric are used. The argument is that children learn ways that allow them to be assimilated into various societal roles that promote the understanding and perpetuation of cultural norms for the betterment of the community they grow-up in (Ejuu, 2019; Nxumalo & Mncube, 2019). It is also important to mention that Nxumalo and Mncube (2019) are not suggesting that indigenous pedagogies should completely exclude Western pedagogies, but rather, that the two should be complimentary so that children in ECE can start their education from what is familiar to them from their communities, that is, indigenous games or traditional games to what is unfamiliar, such as Eurocentric teaching and learning materials (Madondo & Tsikira, 2022; Tachie & Galawe, 2021). In this way, traditional games can be used to “learn norms and values of the society”

(Hafina et al., 2022, p. 405), “craft and foster national identity” (Nxumalo & Mncube, 2019, p. 105) as well as develop self-esteem for personal and national development.

Ramayenda (2020) brings into the discussion a very cardinal aspects that begs consideration especially that the main purpose of any type of education is to develop human beings into productive people for the benefit of the community and the nation at large. The argument by Ramayenda (2020) is that providing education to children at an early age by using locally available and familiar “methodologies and pedagogies has great success” including determining the “future success of the learners” (p. 13). This requires the localisation of the curriculum (Nxumalo & Mncube, 2019) used in schools to capture the methodologies and pedagogies that are indigenous in nature and apply games for a particular society and community (Ejuu, 2019; Moloji et al., 2021; Ogunyemi & Henning, 2020; Tachie & Galawe, 2021).

Moloji (2020) also adds that teaching using indigenous games provides an “environment conducive to learners to explore their abilities” as well as giving an opportunity for “class interaction” thereby bringing about innovation and creativity in the learners (p. 129). The role of the teacher in this case is to illuminate misunderstandings and confirm the discoveries from the children’s interactions and innovations (Ejuu, 2019; Moloji, 2020). This also helps to eliminate or reduce what Nxumalo and Cedillo (2017) observed that colonised Eurocentric epistemologies continuously treat nature and non-humans as separate entities from humans. It is therefore cardinal that teaching and learning activities in ECE classrooms cover aspects of ethics, morals and values that support sustainability in indigenous communities (Acharibasam & McVittie, 2021) such as rural areas of Chibombo District in Zambia.

Planning for lessons in an indigenous pedagogical approach has key aspects that need consideration by the teachers and their support systems in the ECE/ECD setup. According to Moloji (2020), the “planning of lessons that can contribute to high level scores” in children needs to be collaborative in nature so that teachers and learners as well as “parents have an input in the materials to be taught and learned” (p. 130). Such a lesson can be planned in such a manner that both teachers and



learners participate by preparing materials, arranging them and then allowing the teacher to provide few instructions for learners to execute the tasks on their own with little or no help from the teachers (Moloi et al., 2021).

Learners for example, can collect sticks or stones to be used in lessons, while the teacher can give clear instructions on the size and length of materials as well as the quantities (Moloi, 2020; Moloi et al., 2021). Thereafter, learners can be given time to manipulate the materials and come up with desired results that would respond to the learning outcomes that the teacher envisages to achieve (Ejuu, 2019; Kejo, 2017; Madondo & Tsikira, 2022). This is confirmed by methods of teaching that were applied in Moloi's (2020) study whose results obtained from the use of indigenous or traditional games bring to the fore the argument that teachers and learners can work together to enhance early learning in preschools by working with locally available materials as suggested by other scholars such as Lungu et al. (2021), Madondo and Tsikira (2022), and Nakawa (2020).

Nakawa (2020), for instance, encourages the teaching of mathematics to preschool learners in Zambia using traditional games to teach basic mathematical concepts by allowing teachers and learners to cooperate in this process. According to Nakawa (2020), this is not seen in most Zambian preschools she studied, making teaching and learning of mathematics very difficult and challenging for both teachers and learners. It is therefore important that learners in Chibombo District, Zambia, to take the role of collecting learning materials from their communities or villages (Ejuu, 2019; Tachie & Galawe, 2021) which teachers then use to plan lessons for learning to take place effectively. When familiar and locally available materials (Madondo & Tsikira, 2022) are collected by the learners themselves, learning becomes more meaningful as children become full participants (Ejuu, 2019) in their own learning process. This study found IKS very useful and connected it well with Jean Piaget's theory of play that is discussed in the next section.

#### *3.2.2.2 Piaget's theory of play*

This section discusses Jean Piaget's theory of play in detail and shows how it can be applied in early childhood education. It also makes relevant connections between the theory of play with the use of indigenous games that are central to this study.

### *3.2.2.2.1 Play*

Play has been described as central in children's development for a long period in the history of human education (Bruce, 2018; Lindon & Brodie, 2016; Macintyre, 2017). According to Bruce (2018, p. 21), proponents of education such as Friedrich Froebel, Maria Montessori, Jean Piaget and Lev Vygotsky, especially for children during preschool years, agree that "early childhood is not merely a period a period when children are prepared and trained for adult life" but rather, a period to be enjoyed by learners through playful activities. Play acts as an organising function which integrates learning and enables children to apply their knowledge and understanding in relation to their developing ideas and feelings (Bruce, 2018; Macintyre, 2017). The theory of play therefore becomes vital to be studied and applied in modern early childhood practice through games that are familiar to the learners in a particular community (Parker et al., 2022; Pyle et al., 2018).

### *3.2.2.2.2 Theorising play through Piaget's lens*

Proponents of theories of play argue that children are active learners and not inactive participants in learning (Devi, 2019; Nilsson, Ferholt & Lecusay, 2018). Children are motivated to report to school on a daily basis if the learning environment is more playful in nature and allows interactions (Munsaka & Kalinde, 2017). Free play becomes vital in supporting learning as well as helping the teacher meet the desired learning outcomes in the children (Nilsson et al., 2018). It is argued that a "constructivist classroom provides" children with an opportunity to engage in various activities that allow them to "discover new ideas" and "construct their own knowledge" (Devi, 2019, p. 8).

Bonel and Lindon (2014) agree by suggesting that children use both first-hand and prior experiences to develop their learning and understanding of their environment. Piaget also believed that children learn through imitating others and transform the imitated ideas or actions into symbolic behaviour (Munsaka & Kalinde, 2017; Nilsson et al., 2018). Children can therefore learn from teachers, classroom peers, parents and other community members during playful learning by applying games that are familiar to them (Nxumalo & Mncube, 2019). Imitation in children, especially in

preschool years remains a vital aspect that supports learning to take place in a playful manner (Bruce, 2018; Bonel & Lindon, 2014; Macintyre, 2017).

Teachers in this case retain a “status of being scaffolders” who ensure that they provide space and environment that is fit-for-purpose so that teaching and learning can be full of play activities that are indigenous to a particular community so that a “real world” is provided to the learners (Nilsson et al., 2018, p. 233). Pramling, Wallerstedt, Lagerlöf, Björklund, Kultti, Palmér, Magnusson, Thulin, Jonsson, and Samuelsson (2019) emphasise that classroom spaces and outdoor learning environments indeed must be free of rigid rules and should have enough space for a variety of activities to take place. Among the activities that children should engage in, should be traditional games that require digging of holes, collecting of sticks, use of stones and constructing of small houses or artistry for learning purposes (Ejuu, 2019; Munsaka & Kalinde, 2017; Nxumalo & Mncube, 2019).

Children should therefore, construct knowledge through interactions between their own age groups and teachers or significant others in the school and home (Nilsson et al., 2018; Pramling et al., 2019). Bhagat, Haque and Jaalam (2018) add that introducing “age-related play can expand the schematisation process in children” (p. 128). This is further concretised by Bonel and Lindon (2014) who argue that children find it easy to engage in types of play that reflect their level of cognitive development. These types of play include, functional play, constructive play, symbolic/fantasy play and games with rules as explained earlier in this study (Munsaka & Kalinde, 2017).

According to Andersen, Kiverstein, Miller and Roepstorff (2022), “play is a form of informal experimentation that allows children to optimise [knowledge] gain and learn about themselves and the environment” they live in (p. 2). For example, in functional play, the child makes body movements such as running, jumping, sliding, gathering, dumping, manipulating and stacking objects as well as in informal games that do not have rules to follow (Bonel & Lindon, 2014). As children engage in the activities stated by Bonel and Lindon (2014), they develop various skills that include cognition, fine and gross motor skills as well as socialisation. This type of play can be useful to children by using items or objects that are indigenous in nature (Munsaka & Kalinde, 2017; Nxumalo & Mncube, 2019).

Indigenous play and traditional games therefore when applied using Jean Piaget's theory of play (Bruce, 2018), make good use of sticks, stones, sand and clay in an organised and goal-oriented manner (Madondo & Tsikira, 2022, 2022; Moloji, 2020). With time, children begin to engage in symbolic/fantasy play which involves role playing or make-believe play such as pretending to be a baby, driving a clay car and using a block of wood as a cell phone or a means of communication (Andersen *et al.*, 2022). Children find pleasure in mimicking their teachers and parents or significant others in their communities, in school and home tasks as they play. The imitation happens in a playful nature with play mates of similar age groups or learners in the same classroom (Bruce, 2018; Macintyre, 2017).

In schools, early childhood learners are not left out in taking part in traditional games with peers that are controlled by pre-established rules such as *nsolo*, *pada*, *tag*, *sheep-sheep-come home* among others (Leong & Bodrova, 2015 Lungu *et al.*, 2021; Munsaka & Kalinde, 2017). Piaget viewed forms of play including [indigenous games] as progressive or cumulative as they bring out initiative and creativity among children (Leong & Bodrova, 2015). Of all these forms of play, symbolic/fantasy play is viewed by many ECE experts as the highest level of play in pre-schools as it develops children's social skills, basic mathematical abilities, early literacy concepts and behavioural self-regulation (Andersen *et al.*, 2022; Leong & Bodrova, 2015). This is important as it prepares children for later academic, social and emotional successes as alluded to by Bhagat *et al.* (2018).

Scholars agree that different forms of play contribute immensely to developmental domains in children and that the usefulness of each of them cannot be overemphasised (Andersen *et al.*, 2022; Bhagat *et al.*, 2018; Munsaka & Kalinde, 2017; Nilsson *et al.*, 2018; Pramling *et al.*, 2019). In fact, Bhagat, Haque and Jaalam (2018) emphasised that play in children can support the "development of self-play tools" that are useful in "enhancing schematisation" that is highly needed in preschools for learning to take place and for children to enjoy the learning environment (p. 130). The emphasis is on creating a learning environment that is familiar to learners with a great indigenous touch to it so that it can promote cognitive development in learners by enhancing the acquisition of skills such as emergent

literacy and numeracy skills (Parker et al., 2022; Pramling et al., 2019; Pyle et al., 2018).

Teachers, therefore, are key in ensuring that there is a variety of teaching methods and pedagogies that include various forms of indigenous play that are known and interesting to learners (Madondo & Tsikira, 2022; Moloji et al., 2021; Nxumalo & Mncube, 2019). This would accommodate all learners in a classroom including developmentally delayed children in language, social and indeed other developmental domains (Bhagat et al., 2018); Pramling et al., 2019). Play as theorised by Piaget (Bruce, 2018; Macintyre, 2017), for children in any classroom or learning environment, therefore, supports the holistic growth and development of children without leaving any one child behind.

This theory fits well in this study as it helps in situating the study within the different forms of play that are used in Chibombo District by linking them to educational progress and development in preschool learners from different countries (Ejuu, 2019; Hafina et al., 2022; Nakawa, 2020; Ogunyemi & Henning, 2020). In this case, indigenous games or traditional games (Ejuu, 2019; Kejo, 2017; Nxumalo & Mncube, 2019; Smith, 2017) that are useful in the locality of the research have assisted this study to establish the relationship that exists between indigenous games and early learning in ECE in Zambian preschools schools. The theory also brings in knowledge on how different types of play such as 'constructive play' can allow children to manipulate and control their indigenous environment for early learning to take place (Munsaka & Kalinde, 2017). This is vital in preschool learners as play is known to be the centre of all activities that children engage in all day long (Parker et al., 2022). It is expected that even children learning in ECE centres in Chibombo District of Zambia, will be helped to acquire the necessary skills when their teachers use pedagogical approaches that are supported by this theory.

### *3.2.2.3 Lev Vygotsky's sociocultural theory*

This section discusses Lev Vygotsky's sociocultural theory of play in detail and shows how it can be useful in early childhood education practice. It also makes pertinent connections between the theory of play with the use of Indigenous games that are central to this study.

### 3.2.2.3.1 Sociocultural theory

The sociocultural theory is of fundamental importance in this study as it promotes active play in learners, aided by skilled teachers and brings about cognitive development (Ryoo & Kekelis, 2018). For any meaningful learning and development to take place in children, the theory encourages having an environment that is stimulating with teachers who can plan lessons that are practical in nature (Bodrova & Leong, 2019). Lessons in early years learning as suggested by Tachie and Galawe (2021) need serious forethought by teachers in order to make them interesting and enjoyable to learners.

The practical lessons and activities in ECE classrooms should also encourage social interaction among learners and with teachers (Ryoo & Kekelis, 2018). Classroom and outdoor activities as pointed out by Madondo and Tsikira (2022), Mloi et al. (2021), Nxumalo and Mncube (2019), and Tachie and Galawe (2021) should be indigenous in nature to a particular community where a school is located and should be planned and executed by teachers who have knowledge and are skilled in local games and songs. Learners in Chibombo District for example, should be taught by teachers who are familiar with local games such as *nsolo*, *chiyato*, *wider*, *skip* and *touch* that can be used to teach mathematical concepts such as counting and measuring as elucidated by Nakawa (2020) and emergent literacy discussed by Kenanoğlu and Duran (2021) on Asian pre-school learners.

The social interaction that learners experience in the classroom as well as during outdoor activities builds in them the ability to express the knowledge that they bring from their communities (Bodrova & Leong, 2019). According to Kenanoğlu and Duran (2021), children in preschools bring with them activities from home such as “tongue twisters, pantomimes, counting-out rhymes, riddles, dramas, finger games and story completion” (p. 75). Such activities are also common in many African communities where storytelling, jokes, dramas, riddles, songs, and dances are key features of children’s activities (Ejuu, 2019; Kejo, 2017; Madondo & Tsikira, 2022; Nakawa, 2020; Tachie & Galawe, 2021).

Vygotsky argues that children strive for other people in the community to interact with from as early as the time they are born, throughout their childhood and schooling time, including interacting with teachers and peers in classrooms and outdoor learning environment (Ryoo & Kekelis, 2018; Vygotsky, 2016). The interaction children or learners seek out from adults, in this case teachers, is mostly expressed through playful activities that teachers include in their planned lessons on a daily basis (Bodrova & Leong, 2019; Ryoo & Kekelis, 2018). Learners are expected to learn, while teachers provide an atmosphere that promotes the acquisition of skills through play in order to achieve the expected learning outcomes (Bodrova & Leong, 2019; Ken-Aminikpo, 2020).

Vygotsky's sociocultural theory (Ken-Aminikpo, 2020) further posits that "social interaction and imaginative play are great champions to the process of cognitive development in children" (p. 168). The argument in this discourse is to emphasise social activities that children engage in during lessons that assist them to discover meanings from things around them in their environment and community. As alluded to earlier in this paper, the theory contends that children who are at play continue to have conversations with either themselves or others and continue making sense of the world around them (Selmi et al., 2015). ECE teachers are therefore encouraged to permit learners to "socialise and communicate" in a lively fashion throughout the lesson (Ryoo & Kekelis, 2018). The result of applying playful pedagogies brings about significant and positive child development that enhances early learning in preschool children (Bonel & Lindon, 2014).

Jamero (2019) adds by suggesting that children's experiences in classrooms and indeed in any learning environment provide "opportunities to interact, observe and learn a new skill" in their daily practical activities guided by adults (p. 154). This is in line with the Zone of Proximal Development (ZPD) proposed by Vygotsky (2016) that shows that as children play, they explore the environment, expand their horizons and construct their own knowledge through peer and adult interactions in schools (Nilsson & Ferholt, 2014). The environment herein is the indoor and outdoor learning spaces with facilities that allow the use of traditional games for the purposes of constructing knowledge by preschool learners. Play therefore becomes a leading source of development (Nilsson & Ferholt, 2014) in preschool learners who are

active participants in both adult-led and peer-led (Bodrova & Leong, 2019; Jamero, 2019) indigenous games.

Play as observed by Vygotsky's sociocultural theory (Vygotsky, 2016) brings to the fore aspects that are cardinal in "developing the competencies necessary for children's success in school and beyond" (Bodrova & Leong, 2019, p. 38). ZPD and scaffolding emerged as vital explanations to tasks that children can achieve either independently or with the aid of a teacher or another skilled learner/child (Bodrova & Leong, 2019; Jamero, 2019; Ken-Aminikpo, 2020). ZPD in this case has two ends, (1) the lower end which shows skills children can achieve when working independently and (2) the higher end which reflects skills children achieve after receiving significant support from teachers or other more skilled peers (Bodrova & Leong, 2019; Nilsson & Ferholt, 2014; Vygotsky, 2016).

The indigenous or traditional games that are much simpler and well-known by learners are therefore used to solve particular concepts either in mathematics or science or emergent literacy while the games with more complex rules and regulations are used to solve higher order concepts of the school curriculum (Moloi, 2020). The teacher uses scaffolding to assist learners achieve the desired outcomes using indigenous ways of learning (Nxumalo & Mncube, 2019). A teacher does this by strengthening the knowledge and skills that learners come with from home through lessons that move from known to unknown as well as familiar to unfamiliar tasks (Macintyre, 2017).

In this research, I chose the sociocultural theory as it is an all-encompassing model of learning using indigenous games for teaching and learning in Zambian preschools. Children in preschools need to be given tasks that range from easy to difficult, simple to complex but realistic (Parker et al., 2022) so that they are completed within a specific period in an indigenous environment that uses indigenous methods of teaching using indigenous or traditional games. The study argues that teachers are key in defining as well as creating learning spaces that are stimulating to learners (Macintyre, 2017) using familiar games (Ejuu, 2019; Kejo, 2015) in particular indigenous communities such as Chibombo District of Central Province, Zambia. As such, teachers should be well-equipped with knowledge, skills



and practices (Parker et al., 2022) in teaching early childhood learners by using indigenous games or traditional games (Madondo & Tsikira, 2022). The outcome of this practice by ECE teachers is the enhancement of the acquisition of emergent literacy and numeracy skills in learners.

### **3.3 HOW THE THREE THEORIES SUPPORTED THIS STUDY**

Indigenous knowledge systems (IKS) brought into the study the traditional games, local songs, local materials and local pedagogical practices that were familiar to the learners as well as friendly and inexpensive for rural communities such as the ones studied in this research. This was vital as teachers were encouraged to use knowledge from home that learners brought to the school to enhance learning in learners. Learners also found it easier to use local games and materials than Western teaching and learning aids that were unfamiliar and complex to them.

Jean Piaget's theory of play emphasised the need for teachers and adults to allow learners to learn through imitation and mimicking adults (teachers) for them to discover new ideas and construct their own knowledge. The theory looks at teachers as the key people who children can imitate in schools. As such, teachers were operating as scaffolders who provided children with appropriate and conducive learning environments that were used through playful activities.

Lev Vygotsky's sociocultural theory brought into the study the importance of culture, social experiences and the ZPD in order to support holistic child development. This was important as traditional games are culturally embedded and are experienced socially by those who play them. The different traditional games also allow learners to play games through the support of teachers and peers until a specific skill such as counting, and phonics were attained. This assisted me to ensure that each age group or level of education was using games that were within their ZPD.

The use of the three theories was appropriate as each one of them played a role in responding to one or two objectives. For instance, IKS applied well in responding to the first objective that was focusing on the identification of indigenous games used by teachers in schools to teach emergent literacy and numeracy skills. Piaget's theory of play and Vygotsky's sociocultural theory worked well in answering the

second objective on pedagogical approaches used by teachers when using traditional games in their lessons. Objectives Three and Four were also responded to through Piaget's theory of play and Vygotsky's sociocultural theory as they looked at challenges and intervention measures when using traditional games in teaching and learning.

### **3.4 CHAPTER SUMMARY**

This chapter has worked around providing information on a major component of any research study such as a theoretical framework. It has shown that the theoretical framework is considered by researchers as a plan or blueprint through which the study has been theorised. The chapter has also endeavoured to show that the theoretical framework is the reinforcement of this study through its chosen theories namely; indigenous knowledge systems (IKS), Piaget's theory of play and Vygotsky's sociocultural theory. The three theories have been discussed as playing complementary roles in enhancing early learning in preschool learners. The chapter started with a brief highlight of what a theoretical framework is. It continued with detailed explanations and connections of IKS with teaching and learning in preschools in Zambia and beyond. Finally, the chapter has discussed Jean Piaget's theory of play and Lev Vygotsky's sociocultural theory and their application to early childhood practices. Chapter four will address key components of the methods and techniques that the study employed.

## **CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY**

### **4.1 CHAPTER OVERVIEW**

The previous chapter has worked around providing information on a major component of this research study – a theoretical framework. It has shown that the theoretical framework is considered by researchers as a plan or blueprint through which the study is theorised. The chapter has also endeavoured to show that a theoretical framework is a fortification of this study through its chosen theories, namely, indigenous knowledge systems (IKS), Piaget's theory of play and Vygotsky's sociocultural theory. The three theories have been discussed as playing complementary roles in enhancing early learning in preschool learners. The chapter started with a brief highlight of what a theoretical framework is. It continued with detailed explanations and connections of IKS with teaching and learning in preschools in Zambia and beyond. In addition to IKS, the chapter discussed Jean Piaget's theory of play and Lev Vygotsky's sociocultural theory and their application to early childhood practice.

Chapter Four addresses areas pertaining to the research methodology that supported this study in order to respond thoroughly to research objectives and questions. It addresses in detail the research design, methods and strategies of inquiry that were employed in this research. The chapter provides the appropriate qualitative approach adopted, including discussing reasons for the choice. The decisions made on the research design, data collection methods and procedures including data analysis are also described in detail. In addition, the population of the study, sampling techniques/procedures and sample size are equally defined. It also shows techniques or strategies that were used to ensure data credibility, dependability, transferability and trustworthiness. The chapter concludes by providing strategies that were used in gaining access to the research field and research ethics that were adopted and applied in the study. Overall, the chapter presents methods and techniques that were applied to ensure that the research carried out was rigorous, objective and credible so that the findings reported are trusted.

## **4.2 INTRODUCTION**

Research methodology is the science of studying various steps that a researcher takes in order to solve a research problem scientifically and systematically (Hennink et al., 2020). By contrast, research methods are the techniques a researcher employs in the process of conducting a study in order to provide a solution to a research problem under investigation (Kothari, 2019; Kumar, 2019). The emphasis in research methodology is to give clear reasons for why a research approach has been adopted, and why it is more suitable for the problem under investigation than other approaches (Kumar, 2019). It is vital that research has “philosophical underpinnings” necessary for a study to be conducted smoothly and thoroughly (Linake et al., 2022).

Research methods, on the other hand, include the paradigm, the research strategy, the population and sampling, the instrumentation and data collection techniques, the data analysis and interpretation techniques, the data trustworthiness, and the limitations and delimitation of the study (Cohen et al., 2018; Linake et al., 2022). Methodology in research is therefore the procedure that a researcher uses to acquire knowledge while methods are tools that a researcher uses to acquire knowledge. The section that follows shows the research paradigm chosen for the purposes of acquiring knowledge on the role of indigenous games in enhancing early learning in preschool learners.

## **4.3 RESEARCH PARADIGM**

A paradigm as viewed by Linake et al. (2022, p. 91) is a “human creation, which deals with principles and worldviews” that show decisions researchers make in order to make meaning out of data during research. These choices made by researchers often get to be expressed in certain forms before, during and after data collection (Creswell & Poth, 2018). The major dimensions of the research process as postulated by Linake et al. (2022, p. 92) include “ontology, epistemology, methodology, and axiology” that make up the choices that a researcher must deeply consider before and throughout the research process. Creswell and Creswell (2018) postulates that a research paradigm is an all-inclusive scheme of interconnected practice in research.

There are various types of research paradigms one can choose to use in a research study. Mphahlele (2018), identifies positivism or post-positivism used in quantitative research methods, interpretivism or constructivism predominantly used in qualitative research, the transformative paradigm used in qualitative, quantitative and mixed methods research, and pragmatism paradigm which is also used in both qualitative and quantitative research. Interpretivism fits well in most qualitative studies as it involves understanding and making explanations of the phenomenon in its natural setting and real-life situation (Corbin & Strauss, 2015). According to Linake et al. (2022, p. 95), interpretivism has “multiple realities” that a researcher “can interpret” from a single phenomenon at the same time and it involves understanding, describing and discovering new knowledge from the subjects.

This study situates itself in a qualitative research approach using a participatory action research design through an interpretivist paradigm as it places the researcher in a participant position in investigating the role that indigenous games play in enhancing early learning in preschool learners (Corbin & Strauss, 2015; Creswell & Poth, 2018; Kothari, 2019; Linake et al., 2022). Considering that this study involves visiting schools daily in their natural settings, qualitative research approaches (Creswell & Poth, 2018; Kumar, 2019) that use a participatory action research design through interpretivist paradigm are appropriate as they provide an atmosphere that allows meaning making of observed phenomena (Linake et al., 2022) in preschools and in their natural setting. For this reason, the next section of this chapter provides detailed data on qualitative research approach, the research designs in it and how the current study applied them in the research process.

#### **4.4 RESEARCH APPROACH**

Research approaches are plans or procedures that a researcher chooses to apply in their study due to philosophical beliefs about the ways that data is collected, analysed and interpreted in a research project (Linake et al., 2022). This study adopted a qualitative research approach to guide its research process. Creswell and Poth (2018) argue that qualitative research is an enquiry that is naturalistic in nature and seeks an in-depth understanding of a social phenomenon in its real-life context. It uses data that is obtained from first-hand observations, interviews, discussions,

photographs, questionnaires and video recordings, among others (Cohen et al., 2018; Creswell & Creswell, 2018; Kothari, 2019). It is premised on the tenets of natural inquiry, which bring about multiple realities of a studied phenomenon (Ugwuanyi, 2022). Hennink et al. (2020, p. 92) posit that qualitative research “aims at gaining a detailed contextualised understanding of the phenomenon studied”.

Further, Cohen et al. (2018, p. 54) posit that qualitative research is a worldview that allows researchers in the social sciences and education to come up with strategies that are aimed at building better education practice among teachers and learners, to promote quality learning. It is concerned with text and people’s voices, views, thoughts, feelings, intentions and ideas on a particular subject (Creswell & Creswell, 2018; Creswell & Poth, 2018). Data collection in qualitative studies is usually through forms that capture narratives, stories and explanations, or, indeed, observable aspects (Cohen et al., 2018; Creswell & Poth, 2018). The approach in data collection therefore uses multiple methods and techniques that assist researchers to reach conclusions that are meaningful and significant in education practice (Cohen et al., 2018).

Linake et al. (2022) also suggest that qualitative research approach “aims to explore and understand the meaning individuals or groups ascribe to a social problem from their perspective” (p. 93). Qualitative research is therefore inductive in nature and is usually concerned with generating theories from the data as opposed to proving the applicability of a theory (Creswell & Creswell, 2018; Creswell & Poth, 2018; Linake et al., 2022). It is mostly concerned with understanding, describing and discovering meanings of phenomenon being studied (Linake et al., 2022, p. 95). Qualitative research approach therefore plays a pivotal role in helping researchers make meaningful conclusions of the research field and participants therein.

Analysis of qualitative data often takes a thematic approach that uses thick descriptions (Creswell, 2014; Creswell & Creswell, 2018; Creswell & Poth, 2018; Hammersley, 2015). Dube and Shawe (2022, p. 152) conceptualise data analysis as meaning-making of information informed by research questions. Data is therefore analysed using thematic approaches of immersion, reflection, analysing, synthesising,

relating to other work, reflecting and presenting or sharing as postulated by Dube and Shawe (2022). This research approach was indeed suitable for this study, as it accommodated the interpretivist paradigm, which explains views and thoughts from teachers on how indigenous games, when used, can promote acquisition of literacy and numeracy skills in preschool learners in a local context.

This study therefore adopted a qualitative research approach in order to understand “*the role that indigenous games play in enhancing early learning in preschool children in Zambia*” as informed by teachers and learners. This approach helped me to gain meaningful understanding of the learning outcomes that can be obtained if indigenous games are applied in teaching and learning in Zambian preschools. In qualitative approach, a wide range of specific research questions and the research process emerge during data collection and throughout the study (Linake et al., 2022) which allows for varying interpretations of the findings. The research process therefore assisted me to arrive at reasoned conclusions based on research questions that emerged during the research. I have situated this study in an appropriate methodology orientation and methods as I discuss in the next section.

#### **4.5 RESEARCH DESIGN**

The research design is a ‘glue’ that holds together all the elements in a research project (Cohen et al., 2018; Kothari, 2019). According to Hennink et al. (2020), the research design does not only anticipate and specify the seemingly countless decisions connected with carrying out data collection, processing and analysing, but also endeavours to present a logical basis for the decisions made in a study. The emphasis is on conducting a systematic study with laid-down guidelines for research on early childhood education (ECE), from conceptualisation to reporting of the findings (Christensen & James, 2017).

Research design has also been defined by Ugwuanyi (2022, p. 101) as “a plan for particular research” and has been compared to a “plan for a building project”. According to Creswell and Creswell (2018), a research design is a part of an enquiry that provides the right direction for procedures in a given research. Creswell and Creswell (2018) also posit that a research design is a structure for research that

controls all other research elements. A research design as postulated by Kothari (2019) has a sole responsibility for providing an appropriate framework for research. Cohen et al. (2018, p. 165) also state that a research design is the logic that determines the relationships among purposes or objectives, research questions, data and conclusions drawn. Ugwuanyi (2022, p. 101) sums up the argument by showing that a research design is the “blueprint, framework or plan that [governs] the research purpose and the way in which relevant data will be collected, analysed and interpreted in order to draw a conclusion”.

It is vital for a researcher to select an appropriate design that can be used in the study in order to obtain the desired results. This is because, research designs show clearly what the researcher needs to do after conceptualising the research problem (Ugwuanyi, 2022, p. 101). As argued by Creswell and Poth (2018), in addition to the research problem or matter that needs answers, the research design governs or controls all other sections of the research. As such, the research design as pointed out by Ugwuanyi (2022, p. 101) “provides the researcher with an adequate framework for conducting the study” in order not to depart from the research plan and direction.

Ugwuanyi (2022) argues that there are different types of research designs that exist and useful to different types of research studies. It is also argued by scholars that there are so many research designs that are used to solve the many different research problems that man can identify (Cohen et al., 2018; Creswell & Creswell, 2018; Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019; Ugwuanyi, 2022). Cohen et al. (2018) show that qualitative research approach can use grounded theory, case studies, historical studies, phenomenological studies, ethnographic studies and action research. Considering that this study was participatory in nature, a participatory action research design – an approach of action research was appropriate as I argue in the next section.

#### **4.5.1 Action research**

Action research is very vital when researchers aim at bringing about “change and improvement at the local level” (Cohen et al., 2018, p. 440) such as schools in communities. Action research developed and gained popularity through Kurt Lewin’s



work in the 1940s (Cohen et al., 2018). Lewin argued that action research is very vital for social practice especially in fields such as education and health. According to Cohen et al. (2018), the main purpose of developing action research was to bring about social change for disadvantaged groups in relation to “housing, employment, prejudice, socialisation and training” (p. 440). Combining “action” and “research” has attracted several researchers, teachers and academics to this research design, and also breaking the culture of being spectators during research (Creswell & Poth, 2018).

Kemmis et al. (2014) emphasised the need to bring about change and transformation in the way practitioners carry out duties and understand their work professionally. This approach aims at increasing collaboration in places of work between the practitioners and those they serve in the community (Cohen et al., 2018). According to Cohen et al. (2018, p. 440), “action research moves beyond positivist, interpretive and critical research” as it brings in the aspect of self-reflexivity, collaboration and democracy in the research process. Action research is therefore practice-based, concerns learning, knowledge creation and providing explanations as to how and why something a practitioner and a researcher has done has improved (Cohen et al., 2018; Creswell & Poth, 2018; Kemmis et al., 2014).

Action research can be used in nearly any situation where a problem relating to human beings, tasks and procedures need a solution or indeed where a change in practice (Cohen et al., 2018) such as teaching methods would bring about desirable learning outcomes (Parker et al., 2022). Kemmis et al. (2014) posit that action research may focus on identifying a problem, finding a solution to the problem and researching on an area of interest by a researcher – such as indigenous games or traditional games. This type of research can be conducted by any individual teacher, group of teachers, teachers working with a researcher and or faculty members of university departments (Cohen et al., 2018; Creswell, 2014; Creswell & Creswell, 2018; Kemmis et al., 2014). Action research can be used to explore new teaching methods, learning strategies, evaluating and assessing learning, continuing professional development (CPDs), management and control as well as improving efficiency in the management of schools or institutions (Creswell, 2014; Creswell & Poth, 2018; Kemmis et al., 2014).

Kemmis et al. (2014) suggest that there are many forms of action research. However, all the different forms of action research have a desire to improve practice using evidence available through research (Cohen et al., 2018; Creswell & Poth, 2018). Action research includes participatory action research, practitioner research, classroom-based action research, empirical action research among others (Cohen et al., 2018). Participatory action research (PAR) has been chosen for this study because it allows for active commitment and collaboration between the researcher and the participants. Cohen et al. (2018, p. 441) argue that participatory action research “breaks the separation of the researcher and the participants; power is equalised and, indeed, they may all be part of the same community”. In this case, the research becomes very collaborative and a shared goal and responsibility of everyone who is taking part, be it the researcher and the participants (Creswell & Poth, 2018; Kemmis et al., 2014).

Since this PAR design is investigative in nature, it is “intentionally directed towards solving a problem or focusing on an issue raised” (Cohen et al., 2018, p. 441), and this study endeavoured to work collaborative with preschool teachers in the selected research site. In this study, I dealt with questions of “how” and “why” in a real-life context of ECE centres in Chibombo District of Central Province, Zambia without disturbing the natural setting as well as events of the classroom as teachers deliver lessons. However, I made some suggestions on additional approaches or strategies that teachers could employ when using indigenous games in promoting the acquisition of emergent literacy and numeracy skills. The suggestions made were on the use of age-appropriate traditional games, play-based teaching approach and creative teaching approach.

#### 4.5.1.1 Participatory action research (PAR)

Participatory action research (PAR) according to Cohen et al. (2018) is a research design that “seeks to create conditions for people to work together collaboratively in the search for valid, authentic and morally correct and appropriate ways of understanding the world and participating in it” (p. 444). It is a research approach that gives an opportunity for residents of an area to collaboratively work with outsiders to investigate pertinent issues that affect the community being studied

(Kemmis et al., 2014). It also allows practitioners to understand and develop ways in which practices are conducted within the school system and find ways of reorienting practice in a particular desired direction (Cohen, Manion & Morrison, 2018; Kemmis et al., 2014). PAR does not focus on individuals, instead, it concentrates on the community and influencing “social change and improvement to the quality of people’s lives” (Cohen et al., 2018, p. 444).

According to Kemmis et al. (2014), PAR is a social process that is mainly concerned with people’s collaboration with each other in their working environment. For this to be achieved, individuals working together with others need to participate in all activities of the community genuinely and freely. The participants in this study were also given an opportunity to participate freely and collaboratively. The participation of preschool teachers in this study enabled both the researcher and the teachers to work on ways of using indigenous games in promoting early learning in preschool learners.

PAR is also understood to be a recursive and systematic process of learning from one another as members through planning, action, analysis and reflection (Kemmis et al., 2014). This process need not be a one-off event, but rather, a repeated one that allows checking and re-planning, action, analysis and reflection in order to improve practices (Cohen et al., 2018; Creswell & Poth, 2018; Kemmis et al., 2014). For this reason, participants and the researcher had a chance to work together on indigenous games in order to produce the desired learning outcomes such as the acquisition of reading, writing and speaking skills by preschool learners. The teachers in the study and the researcher used traditional games such as nsolo, pada, kankuluwele, nkwampa, chiyato or chiyenga and songs to teach mathematical skills of numbers, counting, measuring, sorting and seriation.

PAR also “requires participants to build and keep evidential records of practice, theory and reflection and to provide a reasoned justification to others for their work” (Cohen et al., 2018, p. 445). It is a democratic process that enables people to make critical analyses (Kemmis et al., 2014) of the classroom situation in terms of pedagogy and learning outcomes. Participants and researchers need to look at documented information of their own experiences in a very objective manner. As

such, teachers as participants of this study had an opportunity to document their lessons on the use of indigenous games. Teachers planned the lessons individually and taught each planned lesson while the researcher observed. I took part in the lesson by assisting the teacher in executing some tasks such as group work, individual writing or tracing or painting for learners and playing games. Each lesson taught was analysed and reflected upon by both the teacher and the researcher. This process brought about a collaborative and transformative way of improving practice in teachers when using indigenous games for teaching preschool learners.

In this study, I chose to apply a PAR design through an interpretivist paradigm and critical theory due to the appropriateness of the design in research that involved teaching and participating in some classroom activities. The choice of this research design provided an in-depth understanding of the role that indigenous games play in enhancing early learning in preschool learners in Chibombo District of Zambia. This approach remained appropriate, as it addressed the relationship that exists between indigenous games and desired learning outcomes in ECE learners, such as the acquisition of reading, writing, speaking, counting and numbering skills, as postulated by Parker et al. (2022). The current study used PAR to work with teachers in finding solutions to problems with regard to teaching methods and material production. PAR was appropriate as it helped in making meaningful understandings, discoveries and conclusions on indigenous games and their use in teaching and learning in preschools. PAR can be understood as appropriate for scholars as events that took place in classrooms and outdoor with the participation of researchers assisted teachers and learners to adjust on aspects of games that were unfamiliar or unclear. For this reason, the current study argues that PAR can be used by other researchers in Zambia as long as they are familiar with activities that teachers and learners use in lessons. Interestingly, the use of PAR can be frustrating to researchers and participants if one of them is unaware of what to do during activities or indeed takes long to master the skills of using play-based teaching and learning. I now shift my attention to discuss the interpretivist paradigm that my study is anchored on.

#### **4.5.2 Interpretivist paradigm**

An interpretivist paradigm is an approach that is concerned with understanding the world as it is from the subjective perspective of individuals being studied (Creswell & Creswell, 2018; Hammersley, 2015; Kothari, 2019). As Cohen et al. (2018) ably postulate, “Interpretive paradigms strive to understand and interpret the world in terms of its actors” (p. 51). This entails ensuring that meanings and interpretations of data from informants are treated with paramount importance (Cohen, Manion & Morrison, 2018; Ugwuanyi, 2022). Cohen et al. (2018) further clarify the vitality and nature of this paradigm by showing the fluidity of research that is anchored on interpretivism. The authors place researchers in a situation of “double hermeneutic” propounded by Giddens (1976), a situation “where people strive to interpret and operate in an already interpreted world” (Cohen et al., 2018, p. 51). In this case, researchers find themselves making interpretations of the world which has so many views, values and interpretations presented by each member of a society, and these aspects affect research significantly (Creswell & Creswell, 2018; Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019). Every argument or matter has a two-way system or can be viewed differently depending on the circumstances (Cohen et al., 2018).

Interpretivism is therefore, a worldview that an individual researcher has on the choices or decisions one makes in finding answers to the research questions of a study. Linake et al. (2022, p. 91) argue that researchers thus “hold a certain view point, whether made explicitly or not”, and it guides the choices that each one of them make as they conduct a study. In view of the foregoing, I placed my study into an ontological and epistemological (Creswell & Poth, 2018) standing that was anchored on the subjective nature of the subjects that were involved in the research. In this way, as a researcher, I made my own meanings and interpretations of the observed use of indigenous games in teaching preschool learners in Chibombo District of Central Province, Zambia.

According to Hennink et al. (2020), the interpretivist paradigm is established on the assumption that techniques used for understanding knowledge in the human and social sciences cannot be the same as techniques used for understanding knowledge in the physical sciences, as the latter uses scientific measurement, while

the former applies a relativist ontological perspective. The interpretivist paradigm, therefore, holds the view that a single phenomenon can have multiple interpretations, or world views, depending on the lens one uses to see, or the approach that is taken and applied (Creswell & Creswell, 2018). I found myself making several interpretations of the views of teachers on the traditional games used to teach emergent literacy and numeracy in the research site.

As Hammersley (2015), Dean (2018), and Hennink et al. (2020) observed, the main interest of an interpretivist researcher is not to generate new theory, but rather to evaluate and refine existing theories related to interpretivism. The interpretivist paradigm is therefore very suitable for qualitative research, as it provides an array of interpretations and generates a wealth of knowledge (Creswell & Creswell, 2018), which can be applied differently in different communities or localities. However, interpretivist research findings have the limitation of not being generalisable, or replicable or applicable, to groups or sub-groups of the population other than where the study was conducted (Cohen et al., 2018; Creswell & Poth, 2018; Kothari, 2019), which necessitated the application and inclusion of critical enquiry (Atkinson, 2015), which I delved into in the following section.

### **4.5.3 Critical enquiry**

Critical enquiry is concerned with enabling human beings to rise above the limitations placed on them by race, gender, and class (Creswell & Poth, 2018; Hennink et al., 2020). According to Creswell and Poth (2018), researchers need to acknowledge their own power, engage in dialogue, and use theory to interpret and illuminate social action. Atkinson (2015), Hammersley (2015) and Hennink et al. (2020) explain that critical enquiry assumes that social reality is historically constituted and that it is produced and reproduced by people. It is important to note that regardless of the ability of human beings to bring about social change in their places of work and living (Cohen et al., 2018; Hennink et al., 2020), there are barriers to doing so (Hammersley, 2015), such as social, cultural and political domination (Atkinson, 2015).

In view of the foregoing, critical researchers encourage educators and curriculum designers to self-critique and provide themselves with an environment that allows

questioning of the status quo, in order to reorient the curriculum and practice, thereby promoting innovative ideas that would bring about change in education practice (Atkinson, 2015; Creswell & Poth, 2018; Hammersley, 2015). This theory was vital as it helped me, and the teachers relook at other ways of teaching mathematics and emergent literacy using traditional games in order to bring out desired learning outcomes in the learners. Cohen et al. (2018, p. 52) and Pham (2018, p. 4) argue that education researchers and educators can benefit from critical theory, by understanding how teaching and learning have evolved over a period due to changes brought about by the sociocultural, political and economic situation of a society.

Both urban and rural communities around the world including Zambia have evolved over the years requiring a new way of theorising teaching and learning (Acharibasam & McVittie, 2021; Lungu & Matafwali, 2020; Parker et al., 2022). Critical theory is appropriate for this study, as it has enabled me to discover the taken-for-granted social, cultural, economic and political situation (Grindheim, 2021) that prevails in modern preschools – rural or urban - which are alienated from indigenous games (Moloi et al., 2021) and have opted to apply modern Eurocentric teaching methods and approaches that are expensive, unfamiliar and inappropriate for learners in rural and low-income communities (Madondo & Tsikira, 2022). This theory helped me and the participants to select games such as nsolo, pada and chiyenga or chiyato that were local, familiar and available in the rural schools studied. A careful look at the chosen research design required a certain way of selecting participants for the study. I now focused my attention on appropriate methods of choosing the sample including ways of inclusion and exclusion.

#### **4.6 POPULATION AND SAMPLING**

The population and sample of any study play a very vital role in the success of the research undertaking (Cohen et al., 2018; Creswell, 2014; Nwaigwe, 2022). It remains one of the most important aspects of research as without this element of research, no study can be meaningful. According to Nwaigwe (2022, p. 117), “objects under consideration must come from a well-defined population” from which a sample is drawn. In this section, I therefore focused my attention on giving detailed

explanations of the population, sampling techniques and sample size, and inclusion and exclusion of participants who were part of this research.

#### 4.6.1 Population

A population is a pool of individuals from which a statistical sample is drawn for a study (Kothari, 2019; Lamm & Lamm, 2019). Nwaigwe (2022, p. 115) defines population as consisting of “total elements of a particular kind of specie in a given place at a particular time according to the interest of the investigators”. He adds by suggesting that the species could be human beings, animals, plants micro-organisms among many other things that man can research (Nwaigwe, 2022). Cohen et al. (2018) also suggest that a population is a whole group of people that have similar or related characteristics that a researcher would like to study. The population in education research and indeed this study, is therefore the number of schools that are in the same geographical area and location from whom a sample can be drawn.

##### 4.6.1.1 Description of the research site and participants

Chibombo District is a rural settlement with an emerging peri-urban community along the Great North Road connecting Lusaka and the Copperbelt region of Zambia. It is in the central province of the country with a largely farming community. The inhabitants are mostly small-scale farmers without formal employment.

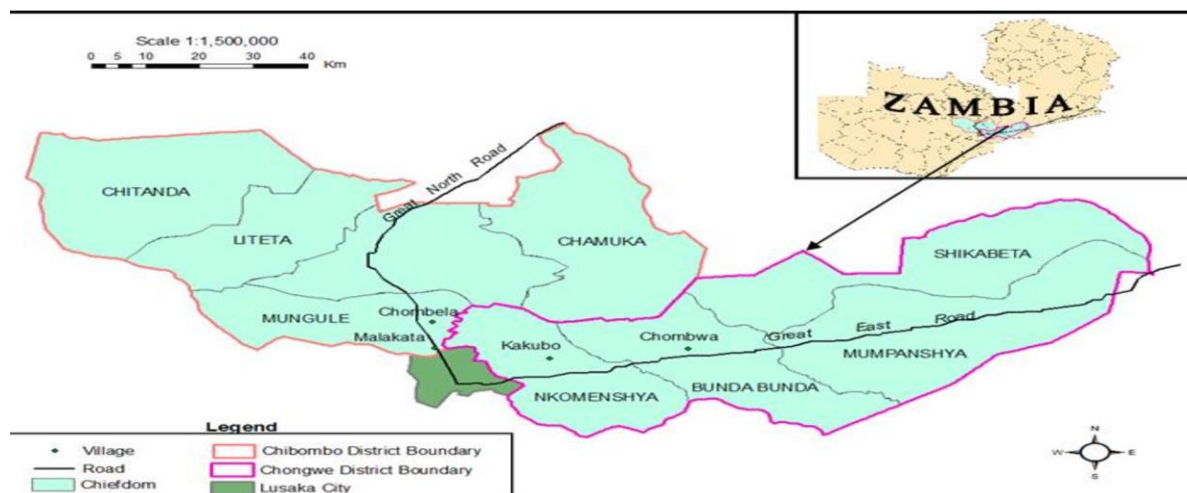


Figure 4.1 Geographical location of Chibombo District in Central Province, Zambia

Source: Google maps



The population for this study included 89 public primary and 74 community schools, making a total of 163 schools that exist in Chibombo District, Central Province, Zambia. From the number of schools given above, 44 had annexes of ECE centres to primary schools while three centres were stand-alone ECE centres bringing the number of primary schools with ECE to 47 in the district. According to records at the office of the District Education Board Secretary in Chibombo, there was a total number of 165 qualified ECE teachers in the district. Out of this number, 97 were newly recruited while 68 had been teaching for over four years. This study included only ECE teachers who were teaching in public schools for a minimum of four years because they had spent more time in early childhood education and had graduated several children to Grade 1. The said teachers were also believed to have some knowledge and skills on use of traditional games in ECE teaching and learning by virtue of the training they underwent in University/College. However, at the point of selecting the teacher-participants, no prior skills were considered apart from the period one had served in the Ministry of Education as an ECE teacher. I applied a deductive approach when selecting the participants that was later inductively refined during data collection as shown in the next section.

#### **4.6.2 Sample**

According to Taherdoost (2016, p. 20), a sample is “a list of the actual cases” drawn from a sampling frame, and it “must be representative of the population”. Nwaigwe (2022, p. 116) also defines a sampling frame as a “list consisting of all the units in the target population that could be used in the selection of [participants] from a population for inclusion in the sample”. For purposes of this study, the sample included ECE teachers who had been practising for at least four years in ECE classes/centres. The sample was selected from qualified teachers who teach ECE classes in Chibombo District, Central Province, Zambia. I now move to discuss the procedure that I followed to select the participants for the current study.

##### ***4.6.2.1 Sampling procedures***

There are different types of sampling procedures that a researcher can employ depending on the type of sample required and the research problem at hand. This study chose to use non-probability sampling by purposefully sampling the

participants from an entire population of the study. Cohen et al. (2018, p. 214) argue that, a non-probability sampling technique is used in situations where the researcher has no interest in generalising the findings of the study but wishes to only present the interest of a specific group of people. Purposive sampling was therefore chosen as it is one of the non-probability sampling procedures that are used in order to focus on specific cases and issues in the sample. This type of sampling was adopted due to its suitability in PAR design for qualitative research (Kothari, 2019). It was the most appropriate technique, as it was useful for examining real-life phenomena and enable both the researcher and the participants to bring about change in ECE practices of the studied schools (Etikan & Bala, 2017; Kothari, 2019).

In this study, four schools were purposively selected from the population of 163 primary and community schools. Only schools with ECE centres in Chibombo District of Central province were sampled because not all primary schools have ECE centres. The District Resource Centre Coordinator helped in selecting the schools as he was more familiar with schools that had ECE centres and teachers who had been teaching for over four years. The reason for this choice of schools was that each school only had a maximum of three ECE teachers, except for one school which had more than three teachers. Most teachers who were teaching in ECE classes in the district were employed in 2022 while others are primary school teachers who are attached to preschool classes. The study only involved teachers who have been practising ECE for a minimum of four years. The selected teachers were able to share knowledge and their experiences of what they had observed over the extended period that they had been teaching since 2014, when ECE was implemented in public schools in Zambia.

All four schools chosen were in rural parts of the research site. Two of the four schools had three teachers each while the other two schools had two teachers each. The study had a total of 10 ECE teachers with varying numbers of learners per ECE classroom due to the rural nature of the research site. The lowest enrolment in the four schools was 37 learners at School 1 in a classroom taught by one teacher while the highest number of learners was 110 at School 3 equally taught by one teacher. This is against the Ministry of Education recommended classroom size which is 30

learners taught by two teachers (Munsaka & Kalinde, 2017; Nakawa, 2020). However, this is not obtained in public and community schools in Zambia.

**Table 4.1: Sample of the participants**

School	Participant Code	Class Taught	No. of Years in Teaching
School 1	TA1	Reception	10 years
	TB1	Middle Class	9 years
	TC1	Middle Class/Reception	5 years
School 2	TD2	Middle Class/Reception	4 years
	TE2	Middle Class/Reception	8 years
School 3	TF3	Reception	7 years
	TG3	Middle Class	4 years
	TH3	Middle Class/Reception	5 years
School 4	TI4	Middle Class/Reception	4 years
	TJ4	Reception	9 years

*Source: G.M Mwinsa*

I began by creating rapport with both teachers and learners in the selected schools. I thereafter interviewed the teachers physically in a one-on-one interview. A focus group discussion was held after the interviews. The focus group discussion was conducted in two sessions, allowing only five teachers in each session. The two sessions of focus group discussion were held on the same day. This gave teachers an opportunity to share ideas on indigenous knowledge and how helpful it was in fostering the acquisition of emergent literacy and numeracy skills. It also enabled teachers to discuss points from the interviews, including sharing their own knowledge of indigenous games. I conducted participant observations of lessons in all the four schools. A follow-up interview was conducted to deal with areas that needed clarifications. Document analysis was also conducted which reviewed existing documents such as schemes of work, weekly forecast, daily routine schedules, lesson plans and records of work. The review of documents provided data on teachers' ability to plan lessons that include the use of traditional games that most teachers had not talked about.

Chibombo District was chosen due to its proximity to the researcher's work environment, as well as the diversity of languages and cultures therein, which provided a rich analysis of the various indigenous games. Further, the research site was appropriate to me as I lived in the area during my childhood and was able to

easily relate to most traditional games that are being used in the communities today. The selected research environment provided an array of indigenous games in the Chitonga, CiBemba, Lenje and Nyanja languages.

#### 4.6.3 Inclusion and exclusion criteria

The main inclusion criterion in this study was being qualified as a teacher of early childhood education, with training of not less than two years at a college, or four years at a university.

**Table 4.2: Qualifications of participants**

School	Participant Code	Class Taught	Qualifications
School 1	TA1	Reception	Degree in ECE
	TB1	Middle Class	Preschool Certificate
	TC1	Middle Class/Reception	Preschool Certificate
School 2	TD2	Middle Class/Reception	Diploma in ECE
	TE2	Middle Class/Reception	Preschool Certificate
School 3	TF3	Reception	Diploma in ECE
	TG3	Middle Class	Diploma in ECE
	TH3	Middle Class/Reception	Preschool Certificate
School 4	TI4	Middle Class/Reception	Preschool Certificate
	TJ4	Reception	Preschool Certificate

*Source: G.M Mwinsa*

The participants were drawn from only ECE teachers and had been in-service for at least four years as shown in Table 4.2. All literature and participants not related to ECE or ECD were excluded from the study by Vass et al. (2017) who excluded all literature, participants and issues that were not related to the health study they were conducting. Head teachers and senior teachers were also excluded from the study, as they did not practise ECE in the classroom. The role of head teachers and senior teachers was to work as gatekeepers in the research site (Cohen et al., 2018; Vass et al., 2017) by providing support to me as a researcher to interact with participants who were ECE teachers and learners. During the research process, head teachers and senior teachers did not take part in the study. Only the selected ECE teachers took part in all the research activities; interviews, focus group discussions, observations of lessons and document analysis.

## **4.7 DATA COLLECTION METHODS**

Data collection in qualitative research takes a position that requires researchers to collect experiences, opinions and thoughts of participants in a social context or in a natural setting (Masha & Eze, 2022). According to Creswell and Creswell (2018), researchers need to make accurate choices of relevant research data collection methods that would provide them needed explanations of a phenomenon. In this study, multiple methods of data collection are discussed and applied. For any research study to be credible and accepted by others, it is vital that credibility and trustworthiness of results are also adequately addressed. In this section, I began with a discussion on key instruments and techniques that I used in this research.

### **4.7.1 Instruments and techniques**

Instruments in research are tools or protocols used to collect, measure and analyse data for a subject under study (Malmqvist et al., 2019). Masha and Eze (2022) identify research instruments as “all measurement tools used in data collection for research studies” (p. 124). Techniques in research are individual methods or approaches that a study adopts to help in collecting data and enable the findings to be credible and trustworthy, especially in the case of qualitative studies (Abdalla et al., 2018; Lemon & Hayes, 2020). It is vital that a good research instrument contains clear and definite instructions on how to use it, that it is validated and proven reliable, should be able to gather data in line with research problem and be free from bias including being appropriate for a particular context, culture and diversity (Masha & Eze, 2022, p. 124).

According to Kothari (2019), qualitative studies normally employ interviews, observations, focus group discussions, document analysis and audio-visuals as tools for data collection. Depending on the type of research design a study adopts, appropriate research tools for a certain design are applied (Creswell & Poth, 2018; Masha & Eze, 2022). This study adopted a participatory action research design using an interpretivist paradigm and critical enquiry/theory. This involved only interviews, focus group discussions, observations and document analysis as tools for collecting data. These tools were chosen as they were the most appropriate tools for

interpretivist studies and critical enquiry as suggested by various scholars (Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019; Kvale & Brinkmann, 2015).

A pilot study was conducted at one of the selected schools in the research. After piloting the research instruments, I commenced the data collection process by creating rapport with participants as earlier stated in the research field by introducing myself to them and having mini discussions about what I do and the practice of ECE in general. After rapport had been created and the atmosphere was conducive to proceed with data collection, I conducted interviews with teachers over a reasonable period as each interview was scheduled on different days depending on the availability of the research participants. After interviews were concluded, I organised a focus group discussion which was done in two sessions on the same day. Each session had five participants and looked at the same set of questions. I then made some suggestions on how some indigenous games could be incorporated to teach emergent literacy and numeracy skills in ECE. I thereafter provided teachers some time for them to implement the suggested teaching methods using indigenous games.

Teachers were given a month before I went back to the field and made observations including finding out how the suggested traditional games were working. I conducted observations while each teacher-participant was teaching in order to see the implementation process and progress. During the observations, both indoor and outdoor activities were observed. Activities started with morning routine to the end of the session for each day. Learners worked with teachers in learning in corners such as mathematics corner, arts corner, writing corner and reading corner. As a researcher, I took part in various activities that were organised by teachers both indoor and outdoor such as playing nsolo, chiyato and pada games. My participation was limited to making suggestions on what games to be played for a learning outcome to be achieved. I did not participate in lesson planning and material preparation.

After lesson observations were concluded, I conducted a document analysis of schemes of work, weekly forecast, daily routine schedules, lesson plans and records of work in order to ascertain the inclusion or exclusion of traditional games and their

use in teaching and learning in preschools. The detailed process of data collection using the selected methods that I stated were discussed in detail in the sections that followed. I began by discussing piloting of the research instruments that were used as observation guides and interview schedule in the data collection process of this study, thereafter, I discussed the techniques that were used to collect data.

#### *4.7.1.1 Piloting of the research instruments*

Piloting research instruments or the research process before actual data collection can commence is a very essential aspect of conducting empirical research. Cohen et al. (2018, p. 136) argues that piloting is very essential as it is “useful to judge the effectiveness of a piece of research on participants”. Creswell and Poth (2018) also urge researchers to endeavour to conduct a pilot study in order to make appropriate changes or alterations to the questions to be asked or issues to be observed during the study. Cohen et al. (2018, p. 136), suggest that where a pilot study may not be possible, it is vital to “arrange one or two scouting forays to assess possible problems and risks” that a researcher is likely to encounter during the research. Piloting research instruments therefore remain vital as they help researchers to refine instruments to avoid problems during data collection.

After being granted ethical clearance by the College of Education Ethics Review Committee of UNISA, I proceeded to conduct a pilot study of the instruments and techniques that I had planned to use in this research. I piloted the observation guide and the interview schedule by visiting one school to ascertain the suitability of using the said instruments. I did not manage to pilot the focus group discussion or group interview guide due to time constraints. I however, used the outcomes of the pilot of the individual interview to ascertain possible areas of refinements that were necessary in the group interview.

#### **4.7.2 Interviews**

Interviews in research have been used for many years to gather useful information in fields such as education, health sciences and social sciences (Creswell & Poth, 2018; Kothari, 2019; Kumar, 2019). Interviews are one of the best methods of gathering first-hand information from people on their views, thoughts, feelings, wishes and hopes regarding their own lives and those of others (Kvale & Brinkmann,

2015). An interview is a professional conversation, and it has become popular over the years, especially in marketing and social science research, for the purposes of providing thoroughly tested information through well-structured questions (Kothari, 2019). Interviews need thorough preparation, time to conduct them, energy and patience, as they can be strenuous (Creswell & Poth, 2018; Kothari, 2019; Kvale & Brinkmann, 2015).

There are three main types of interviews, namely unstructured, semi-structured and structured interviews (Kumar, 2019). Unstructured interviews usually have set questions that are closely followed, but open-ended questions are used, so that the conversation can cover a wide range of subjects (Kothari, 2019; Kumar, 2019). The challenge is that there might be too much information, which will be difficult to decipher (Creswell & Poth, 2018). However, that should not be a reason for excluding this type of interview, considering that the more data there is, the better for the researcher to select data that is appropriately responding to the research problem (Creswell & Creswell, 2018; Creswell & Poth, 2018).

Semi-structured interviews, on one-hand, are more popular, as they provide an interview schedule to guide the conversation, while allowing both open-ended and closed-ended questions to be asked (Kumar, 2019). Structured interviews on the other hand, have a rigid set of questions with specific answers expected, and they leave little or no room for unasked questions to be discussed (Creswell & Poth, 2018; Kvale & Brinkmann, 2015). For this reason, in this study, I chose to use semi-structured interviews in order to have flexibility in questioning and to allow participants to also bring in useful ideas that I had not thought about. I now delve into semi-structured interviews that I applied in this study.

#### 4.7.2.1 Semi-structured interviews

This study employed semi-structured interviews, as they were expected to provide information through open-ended and closed-ended questions on indigenous games, children's games and play, as well as learning spaces (Norozi & Moen, 2016). This type of interview was appropriate, as the different cultures in the communities that were studied had information that the researcher did not possess on indigenous games. Semi-structured interviews allowed the participants to provide more



information than what was asked, depending on the cultural values and practices of the community where the ECE centre is located within the district.

In this study, I asked the participants questions about their previous ECE training, their knowledge of indigenous games, and ways of applying indigenous games in teaching emergent literacy and numeracy skills, including the acquisition of other developmental domains such as physical, emotional, social and cognitive skills. Considering that the Ministry of Health in Zambia announced a relaxation of all regulations on Covid-19 pandemic protocols, the interviews were conducted physically on a one-to-one basis. However, I endeavoured to follow all guidelines on conducting interviews, in that, participants maintained social distance.

#### 4.7.2.2 Advantages of semi-structured interviews

Interviews as a tool for qualitative data collection plays a pivotal role in ensuring that participants are viewed as essential to the study and not as manipulatable subjects (Creswell & Poth, 2018; Kumar, 2019). For this reason, semi-structured interviews fitted well in this study as a chosen type of interview considering that it helped in generating knowledge between human beings who are the interviewer and interviewee (Cohen et al., 2018, p. 511). In semi-structured interviews, Cohen et al. (2018, p. 511) posit that “topics and questions are given, but the questions are open-ended”. The format of the interview including the type of questions, the layout of questions and the questioning style is largely tailored to each interviewee’s needs and responses (Cohen et al., 2018; Kumar, 2019). This type of interviewing is highly flexible and open to new useful ideas as knowledge is being generated (Cohen et al., 2018).

Considering that this study involved early childhood teachers from rural communities/or schools, it was appropriate to use different approaches when interviewing each participant due to variations in their communities of practice. I therefore used semi-structured interviews as they were more appropriate in looking at an individual interviewee’s situation, responses and work environment in generating knowledge of this subject matter under study. I endeavoured to be as clear as possible in my questions for me to generate the needed data that was going to answer appropriately the questions that the study was asking. Considering that

individual interviews have their own limitations and shortcomings, I also conducted focus group discussions or group interviews as a complimentary data collection technique as shown in the section that follows.

### **4.7.3 Focus group discussions or group interviews**

A focus group discussion, or interview, is a form of interview that is conducted in a group, as it brings together participants from a larger social group (Creswell & Poth, 2018; Kothari, 2019). This research method allows participants to generate rich data, which they would not have shared during individual interviews (Kothari, 2019; Masha & Eze, 2022). It also allows participants to ask each other questions and clarify research questions, and it helps the researcher to refocus the objectives of the study (Creswell & Poth, 2018; Kothari, 2019; Masha & Eze, 2022).

This study therefore convened two sessions of focus group discussions with participants physically at the District Resource Centre. The sessions involved two schools each with five participants per group. Participants were able to share knowledge and information on the research problem. The discussions also focussed on how to reorient each other on the use of indigenous games to enhance early learning in their respective classrooms.

#### **4.7.3.1 Advantages of focus group discussions or group interviews**

A technique found in interviewing that is growing in popularity among qualitative researchers is focus group discussions or group interviewing (Cohen et al., 2018). According to Cohen et al. (2018), group interviews have the potential to be “cost-effective, time-efficient [and can] generate a wider range of responses than in individual interviews” (p. 527). Scholarly evidence also shows that group interviews can provide useful insights into what an interviewer can pursue at the point of conducting individual interviews with participants (Creswell & Creswell, 2018; Creswell & Poth, 2018).

Further, when a researcher plans for interviews to be conducted in a group, he or she endeavours to plan with participants well in advance. The result of such an arrangement is a minimisation of disruptions especially when the group interviews are to be conducted in schools with learners or teachers (Cohen et al., 2018, p. 527).

This immensely makes the whole study a lot better and helps in generating knowledge of varied opinions at the same time, thereby using such data as a cross-check of versions that would later emerge in individual interviews (Creswell & Poth, 2018).

Group interviews were very appropriate for this study as they helped in generating knowledge of varied opinions from teachers in different schools of varying work environments. Interviews also assisted in harmonising knowledge in teaching methods using traditional games or indigenous games considering that early childhood education in Zambia is still developing. In addition, the group interviews helped teachers learn new ideas, strategies and approaches from each other as they were trained in different institutions with differing ways of applying ECE practice. All-in-all, this type of interviewing assisted me to gather information on the role of indigenous games in promoting early learning among preschool learnings in Zambian schools. After group interviews were conducted, participants were given an opportunity to implement discussed aspects on possible inclusion of traditional games in their lessons. The next section discusses observations that this study employed.

#### **4.7.4 Lesson observations**

Observation is a “systematic data-collecting technique that involves watching individuals in their natural environment or naturally occurring situation” (Masha & Eze, 2022, p. 126). The process of data collection using observations in a research study is normal, natural and is not artificial (Cohen et al., 2018). As Masha and Eze (2022) aptly observe, the process of data collection using observation as an instrument “range from individual cases, through to groups and whole communities” (p. 127). Individuals can be teachers and learners while a group can be made up of a classroom, school or community.

According to Kumar (2019, p. 274), observations are “a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place”, and they are one of the “ways of collecting primary data”. Observations are a critical way of collecting data, especially when researching children and childhood, as questioning might not elicit the desired responses, due to age and lack of

understanding of the objectives of the study (Brinkmann & Kvale, 2015; Hammersley & Atkinson, 2015; Hammersley, 2017; Masha & Eze, 2022). A researcher who chooses to do observations in a study can either be a participant observer or a non-participant observer (Christensen & James, 2017; Kumar, 2019).

I observed the natural environment in the classroom as teachers taught learners using whatever methods they had planned. I observed the lessons after introducing teachers to indigenous games such as *nsolo*, *pada*, *chiyato* or *chiyenga* and *waida* or *wider* in their lesson preparations and delivery. This was done during focus group discussions that brought about a good number of traditional games that teachers had never tried to use in their lessons. Observations were made after the interviews and focus group discussions had been conducted. This allowed teachers to implement aspects that emerged from the interviews and focus group discussions. I was a participant observer which helped me to reduce the power differential between the learners and myself. This allowed learners to mingle and feel free to participate in the lesson activities that teachers used (Hammersley & Atkinson, 2015; Hennink et al., 2020).

Being a participant observer is important, as it enables children to be viewed as partners in research, and not as incompetent participants (Christensen & James, 2017; Hammersley, 2017; Kvale & Brinkmann, 2015; Norozi & Moen, 2016). It is important to stress that power differentials in any research study cannot be completely removed, as most decisions, such as conceiving of a research topic, conceptualising the methods to be used, and deciding who will take part, were done by the researcher, with little involvement of the participants (Christensen & James, 2017; Hennink et al., 2020). This became more important as it enabled me to become aware of the power relations that existed between children and adults (Christensen & James, 2017; Kvale & Brinkmann, 2015) in communities. Conducting research with children or in settings where children are found using observations has a great number of advantages as shown below.

#### 4.7.4.1 Advantages of participant observations

Cohen et al. (2018) have outlined some advantages of using observations in data collection. Some of the advantages mentioned by Cohen et al. (2018, p. 551) are

that participant observations are useful in “enabling the researcher to check the definition of key terms used by participants, observe events and behaviour that might not be mentioned in the interviews and to gather data on sensitive and unspoken topics”. Participant observations are also useful in creating an environment that is free and natural as participants and the researcher become more familiar with each other and reduce power differentials (Creswell, 2014).

Masha and Eze (2022, p. 126) state that observations are “easy to administer, results tend to be more accurate, [are] universally accepted practice[s] and [are] appropriate for certain situations”. Of course, this does not mean that observations have no disadvantages. They have several disadvantages but that is not the focus of this study. It is important to state that, in observations, especially participant observations, the researcher remains a very close member of the group being studied and usually remains a covert researcher (Creswell, 2014; Cohen et al., 2018). This helps the study to move smoothly following the natural events of the group being studied and as such producing thick descriptions of data useful in providing meaningful conclusions than when the participants are aware that they are being studied (Cohen et al., 2018; Kothari, 2019). After conducting observations, several issues that are observed during the activities the researcher is involved in or observed can become good questions for any follow-up interviews or document analysis. The next section has provided insights into other key aspects of data collection that this study employed.

#### **4.7.5 Document analysis**

Document analysis is a methodical process for reviewing or evaluating documents which can either be in hard copy or electronic (Flick, 2018; Morgan, 2022). Document analysis is a form of participant observation which researchers use to gather information on “unspoken topics” and “observe events or behaviours that might not be mentioned in the interviews” (Cohen et al., 2018, p. 551). Examining documents by a researcher provides an opportunity to gather information and interpret it without involving human participants (Flick, 2018; Morgan, 2022). It also reduces biases on the part of the participants (Morgan, 2022) as they might try to provide the answers that they think the researcher is interested in.

For this reason, I included the analysis of documents that teachers use in their daily classroom activities or lessons. The documents that were analysed included schemes of work, weekly forecasts, daily routine schedules, lesson plans and records of work. The aim of analysing the documents listed was to verify the use of traditional or indigenous games during preparation and delivery of lessons by ECE teachers. The documents also provided information on different types of games and teaching methods teachers often use or prefer. The information from document analysis also showed which teachers prepared lessons with traditional games in mind and those who did not. The analysis of documents further highlighted strengths and weaknesses of responses that came from participants during interviews and focus group discussions. The analysis additionally provided gaps that exist in the teaching sector with regards to planning of lessons.

#### 4.7.5.1 Advantages of document analysis

Document analysis is often used alongside other qualitative research methods in order to draw conclusions from multiple sources of data (Morgan, 2022). For this reason, document analysis or review has a number of advantages when used as a data collection tool. Reviewed documents enable a researcher to provide a confluence of evidence which leads to credibility of data collected (Flick, 2018). According to Morgan (2022), document analysis helps researchers to uncover meaning, develop understanding and discover insights relevant to the research problem. In addition, document review plays a very pivotal role in interpretivist paradigm (Cohen et al., 2018; Creswell, 2014) as it helps researchers to make meaningful interpretations of the phenomenon being studied.

As data collection in qualitative research is known to be both tedious and time consuming (Cohen et al., 2018), challenges, limitations and pitfalls emerge and affect negatively the outcome of the study. A researcher therefore needs to be very aware of the common pitfalls that he or she is likely to face during data collection. I now discuss some common pitfalls that a researcher should anticipate in the research process.

#### **4.7.6 Common pitfalls during data collection**

Qualitative research has increasingly become a popular way of researching in fields such as education, health and social sciences (Cohen et al., 2018). Even though this research approach has become popular in the fields stated above, early or novice researchers especially those at master and doctoral levels of studies can face many challenges or pitfalls in the research process as postulated by Oplatka (2021, p. 1881). Cohen et al. (2018, p. 321) have shown that data collection in qualitative research can present pitfalls as the participants might not be truthful, might distort information and might exaggerate the situation to impress the researcher.

Since qualitative research uses open-ended questions during individual and group interviews, there is a tendency by novice researchers to ask questions of “if” and “whether” which usually seem easy to answer and provide decisive responses that might water down the need to generate knowledge with thick descriptions (Oplatka, 2021, p. 1884). It is therefore imperative that researchers, especially beginners, take good care to phrase questions in such a manner that the participant responds with clarity of thought while providing a lot of information on a subject matter.

According to Cohen et al. (2018), qualitative research has a characteristic that is emergent and developing in nature. It is a research approach that is not static but keeps changing or evolving due to time and research environment (Cohen et al., 2018). For this reason, researchers are encouraged not to separate data collection from data analysis as the two remain intertwined due to the descriptive nature of the knowledge generated (Oplatka, 2021, p. 1885). Each interview conducted in a qualitative research approach allows the researcher to refine and modify the questions for the next interview in order to obtain a particular type of data (Oplatka, 2021). As advised by Creswell and Poth (2018), it is very vital for each researcher to personally conduct interviews including making own observations as they understand the research subject better than anyone else who can be trained to collect the data. This is also supported by Cohen et al. (2018) who argue that even though research assistants can be trained to collect data, the researcher should also be in the field throughout the research process in order to get to know the data that is being generated.

In this study, I endeavoured to follow all guidelines provided by scholars such as Creswell and Poth (2018), Cohen et al. (2018) and Oplatka (2021) who suggest that researchers should make extra effort to avoid the common pitfalls that some researchers have experienced in their studies. I ensured that the questions that I asked in the individual and group interviews generated thick descriptions as opposed to easy answers. In addition, I tried not to separate data collection from data analysis which enabled me to do what Oplatka (2021) advises on using interviews to refine or modify the questions for the next interview. In cases where a question seemed to have been misunderstood by the participants, I refined it to make it easier for the participants to provide responses that were clear.

#### **4.7.7 Arranging audio equipment**

Each research must look at a number of equipment that would be useful for the successful implementation of the study from beginning to end (Creswell, 2014; Creswell & Poth, 2018; Kothari, 2019). It is vital for a research team to organise and prepare equipment for generating data collection instruments, data analysis processes and storage of data after the research is concluded (Cohen et al., 2018; Kothari, 2019). The equipment that might be useful especially when conducting interviews, observations and focus group discussions is likely to be for purposes of recording the discussions and observations (Kothari, 2019). In this study, an audio-recording device (voice recorder) and a mobile phone were sourced and procured for the research. The gadgets were used to record observed phenomena during lessons both indoor and outdoor, including recording interviews for individual participants and groups with permission from participants.

##### **4.7.7.1 Recordings during interviews**

Interviewing research participants and writing down their responses has enormous challenges specially to do with managing to record every detail spoken including gestures and facial expressions (Cohen et al., 2018). The use of audio-recording devices works as supplementary tools for a researcher (Creswell, 2014). Audio-recordings have been found useful by scholars as they enable a researcher to go back to the recording and listen to it as many times as possible (Atkinson, 2015; Creswell, 2014; Hammersley & Atkinson, 2015). It also helps researchers to be



taken back to the interview date and reimagine the setting and gestures that the participant was expressing (Creswell & Poth, 2018). In this study, I used an audio-recording tool and a mobile phone in order to capture details of interviews that I would go back to and listen one more time for clarity. This was also done during data cleaning and analysis after transcription of interviews and focus group discussions had been conducted. The recordings of interviews also helped in checking what the participant meant during the interview by recalling the physical reactions made by the interviewees.

#### 4.7.7.2 Storage of data

Storage of data during and after the research process is very cardinal and it should never be ignored by any researcher (Creswell & Poth, 2018; Mason, 2018). It is becoming even more difficult and challenging in the technological era that is currently prevailing globally (Cohen et al., 2018; Mason, 2018). According to Cohen et al. (2018, p. 646), a researcher should endeavour to “create a clear and easily accessible system [by the research team only] for data location, storage, organising, filing and handling, be it in terms of hard copy or soft copy”. The data should be stored in safe and inaccessible place by people who are not in the research team (Creswell, 2014; Mason, 2018). Data collected and stored by researchers should meet the promise of confidentiality, privacy and anonymity assured to participants at the start of the research (Mason, 2018).

In this research, I followed guidelines provided by Creswell (2014), Creswell and Poth (2018), Cohen et al. (2018) and Mason (2018) on data storage mechanisms that meet the ethical considerations put in place for this research. I kept the soft copy of data in my personal computer in files that were password protected so that no one except me, had access to the data. All recordings made on the mobile phone were immediately transferred to my personal computer after the recording and stored in a file that was password protected. Upon transfer of the recordings from the mobile phone and the voice recorder to the computer, the recordings were erased from the mobile phone and voice recorder. I stored hard copies in a trunk under lock and key which I kept at my office away from the reach of any unauthorised individuals. The data will be kept for a period and will be destroyed immediately after five years elapses, as guided by Mason (2018).

## **4.8 DATA ANALYSIS AND INTERPRETATION**

Data analysis and interpretation are vital in qualitative research, just as in quantitative and mixed methods research, as they have a major influence on the outcome of the study (Braun & Clarke, 2014; Cohen et al., 2018; Flick, 2014; Hennink et al., 2020). Analysing and interpreting texts, verbatim quotations, videos, pictures and observation notes requires the use of a whole range of methods and techniques (Braun & Clarke, 2014). Dube and Shawe (2022) conceptualises data analysis as “meaning-making of information informed by the research questions” (p. 152) in a study. As such, in this study, I used different methods of meaning-making or analysing data, in order to obtain a more accurate understanding and meaning of the phenomenon being studied.

According to Kothari (2019, 494–495), there are three main ways of analysing and reporting findings qualitatively, namely:

- i. developing a narrative to describe a situation, episode, event or instance,
- ii. identifying the main themes that emerge from the field notes, the transcribed verbatim quotations or the data, and
- iii. quantifying, by indicating the frequency of occurrence.

This study employed only the first two ways of analysing data above and did not cover the third one suggested by Kothari (2019). For the above ways to be achieved effectively in this study, there are six steps that I carefully followed: (1) familiarising myself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) classifying responses under the same theme, and (6) integrating themes and responses into the text of the report (Kothari, 2019). In order to ensure that good research with rich research outcomes is conducted, I followed all steps carefully without skipping any (Kothari, 2019). The six steps that I followed in this study are outlined below to show how I generated data.

### **4.8.1 Step 1: familiarising oneself with data**

The first stage of the initial engagement with the data for analysis purposes is in line with suggestions from Kothari (2019). I endeavoured to understand the data that I had at my disposal as suggested by Dube and Shawe (2022). Dube and Shawe

(2022, p. 154) argue that for proper analysis to be conducted by any qualitative researcher, it is vital to “read and re-read the collected data”. I therefore took time to read and re-read the data from interviews, be it individual or group interviews and observation notes in order to make meaningful meaning and ensure that the data at hand responds to the objectives and the research questions of the study. This led me to the next step of generating initial codes.

#### **4.8.2 Step 2: generating initial codes**

After familiarising oneself with data, a researcher needs to generate initial codes that can be used when presenting findings (Cohen et al., 2018; Kothari, 2019). I identified common trends in the data by looking at what the participants had been emphasising on in response to the research questions and objectives of the study following the guidance provided by Kothari (2019). I then used the initial codes to draw up a list of themes that emerged from the data set and validated them as shown in the next step.

#### **4.8.3 Step 3: searching for themes and validating themes**

The generating of initial codes helps greatly in searching for themes that are emanating from the data obtained through interviews and observation notes (Cohen et al., 2018; Kothari, 2019). The list of themes that I identified in step 2 was validated as themes that emerged from the data set at hand. I did what Dube and Shawe (2022, p. 154) suggested that it is important to conduct a “member checking” by going back to the participants for them to validate that indeed the themes are a true reflection of their opinions and arguments. I therefore went back to my research participants and requested them to confirm whether the themes I had identified really reflected their views and opinions. This was vital as it helped me to reduce biases that could have influenced the drawing up of themes for analysis purposes (Dube & Shawe, 2022, p. 154). The completion of step 3 led me to step 4 which involved reviewing themes and linking them to the previous studies.

#### **4.8.4 Step 4: reviewing themes and linking them to previous studies**

At this stage, I made a lot of effort in linking emerging themes to scholarly works in the field of indigenous games in ECE and the role they play in enhancing early

learning among preschool learners. According to Dube and Shawe (2022), any good qualitative research should engage with present research findings in the relevant field of study. I therefore read works of leading scholars in indigenous knowledge systems, traditional games and play-based learning for me to appreciate what others had done in relation to the phenomenon under study. In doing this, I became more familiar with theories, methodologies and settings used by other scholars to arrive at certain conclusions as suggested by Creswell and Creswell (2018), Cohen et al. (2018) and Kothari (2019). After reviewing themes and linking them to previous studies, I went ahead to classify responses for interpretation.

#### **4.8.5 Step 5: classifying responses for interpretation**

According to Dube and Shawe (2022), this stage is yet another important aspect of thematic approach in data analysis. The researcher is at this point required to classify responses of the same themes in the same category for easy interpretation in relation to current discourses (Kothari, 2019). I asked myself questions like those asked by Dube and Shawe (2022) such as: “What does this mean to my field in terms of theory and practice?” and “What new insights have emerged from this data, which might have not been visible in the field and which I wish to expose, and why?” (p. 155). I did this after I was convinced that the interpretation, I had was current and was not exposing my ignorance about the field of indigenous games and their role in enhancing early learning in preschool learners. I spoke to my supervisor about my interpretations and conclusions that I was making from the data, including the discourses of leading scholars in this field as suggested by Dube and Shawe (2022). Classifying responses for interpretation finally led me to integrating themes and responses into the report or research thesis.

#### **4.8.6 Step 6: integrating themes and responses into the report**

The last stage in qualitative data analysis using a thematic approach is integrating themes and responses into the report writing (Kothari, 2019). The researcher makes advanced and rigorous meaning of the themes and responses in relation to current studies by showing how the findings agree or disagree with those in other studies (Cohen et al., 2018). Dube and Shawe (2022, p. 155) suggest that, at this point, “the researcher can argue based on [the] data” without any doubt considering the rigor that would have been involved in the research. Patterns in the study that show a

divergent view from what currently exists would also show a researcher's novelty contribution to the field of study (Cohen et al., 2018; Dube & Shawe, 2022). I therefore followed this stage closely and carefully for me to make meaningful conclusions that would either agree or disagree with current studies on indigenous games and the role they play in enhancing early learning in preschool learners in Zambian schools.

In this study, I analysed data thematically following all six steps closely, by looking for related themes and then describing the information in themes and patterns that were exclusive to the selected participants as suggested by Braun and Clarke (2014), Dube and Shawe (2022), Kothari (2019) as well as Kumar (2019). I further described data in detail using direct citations and verbatim quotations that I obtained from audio recordings of semi-structured interviews, observation notes and group interviews or focus group discussions on the role of indigenous games in enhancing early learning in preschool learners. This study, however, did not quantify any data from the field as it was not the focus of the research. Instead, it paid close attention to verbatim and narrations including observations that emerged in the study. A very key aspect of data analysis that I carefully observed was ensuring that data collected was credible and trustworthy. I discuss this vital part of this research process in the next section of this chapter.

#### **4.8.7 Computer assisted qualitative data analysis software (CAQDAS)**

In addition to the six-step manual analysis of data, I also used ATLAS.ti 23, a computer assisted qualitative data analysis tool. Qualitative data is voluminous and as such requires a lot of time. Scholars such as Cohen et al. (2018), Corbin and Strauss (2015) and Hammersley (2015) argue that analysing qualitative data can be tedious, tiresome and laborious. For this reason, computer software has been developed to assist researchers in analysing qualitative data in order to save on time and stress. The use of computer software also allows for accuracy and efficiency in data analysis (Hennink et al., 2020; Lochmiller, 2021; Majumdar, 2022).

In this study, I used ATLAS.ti 23 to analyse data from the research field. I started by obtaining a licence key from UNISA research support unit. I then entered the documents onto the software following guidelines provided during the training

sessions conducted by the College of Graduate Studies of UNISA on use of software in analysing qualitative data. In the software, I generated initial codes as shown in Section 5.3.1 and Figures 5.1 and 5.2. Thereafter, I searched for themes from the initial codes and validated them for use in the report. I also compared the themes with transcripts of the data to ensure that there was credibility and trustworthiness in the research findings. I have provided a detailed process of data analysis in Section 5.3.1 of this thesis. In the next section, I have dealt with data credibility and trustworthiness of the research findings.

#### **4.9 DATA CREDIBILITY AND TRUSTWORTHINESS**

In ascertaining the role that indigenous games play in enhancing early learning in preschool learners, it is vital to consider the quality of data so that it is credible and trustworthy (Aspers & Corte, 2019; Ngozwana, 2018). This study applied strictly the criteria for providing richer and more complete data that responded to the research questions of the study and deal with the research problem in line with the theoretical framework underpinning the research as suggested by Ngozwana (2018).

A qualitative enquiry has received growing support in the field of education research, due to its ability to present findings in various forms (Connelly, 2016; Stahl & King, 2020). Of concern in this type of enquiry is how credible and trustworthy the data in a research is viewed (Aspers & Corte, 2019; Lemon & Hayes, 2020; Ngozwana, 2018). As such, the trustworthiness of data in a qualitative study is largely determined by the approaches that the researcher adopts (Abdalla et al., 2018; de Klerk & van Wyk, 2022). The study selected a qualitative approach using a participatory action research design through an interpretivist paradigm as shown earlier. This study ensured that there was credibility, dependability, transferability, and confirmability of data collected and the research process in general as elucidated below.

##### **4.9.1 Credibility**

Credibility in qualitative research concerns the extent to which the research findings or results can be trusted as having presented facts as they occur in the natural setting, or indeed the environment where the phenomenon is studied (de Klerk & van Wyk, 2022; Nassaji, 2020; Ngozwana, 2018). According to Stahl and King (2020), one method of ensuring that there is credibility in a given research study is to employ

a variety of techniques for collecting data, in order to reach some form of congruence. Ngozwana (2018) and Shufutinsky (2020) explains that data needs to be collected and analysed in various ways in order to obtain the underlying meanings from narratives and stories without losing the focus of the study.

This study endeavoured to demonstrate an audit trail of the data collection and analysis process throughout the research process as suggested by de Klerk and van Wyk (2022), Lemon and Hayes (2020), and Stahl and King (2020). I made abundant effort to conduct an audit trail by re-checking the data collection procedures that I planned to use and whether I had followed them closely or not in the entire research process. Research aspects that showed gaps or inadequacies during the research process were identified and re-visited in order to ensure rigour. Research data or research process that is credible can also be said to be dependable as shown in the next section.

#### **4.9.2 Dependability**

Dependability is the equivalent of reliability in quantitative research methods (Abdalla et al., 2018; Nassaji, 2020; Ngozwana, 2018; Stahl & King, 2020). The idea is that after a conclusion has been reached by a researcher using qualitative research methods, the same findings or results can be reached by other scholars, who would reach a similar conclusion (Nassaji, 2020; Ngozwana, 2018). To ensure the dependability of a particular study, Johnson et al. (2020, p. 145) suggest that “the research method must be reported in detail”, so that scholars or readers that look at the study can see exactly what methods were followed, as well as ascertain whether the same methods can be used by other researchers in future and find similar results.

In this study, I have reported all the methods and techniques used in detail and with great thoroughness so that future researchers can use them and possibly find similar results. The methods and techniques that I used in this study, if applied in another peri-urban or rural area in Zambia can produce similar results to the ones I found in this research. This then leads to the question of whether the research findings that I obtained in Chibombo District using the research problem and questions employed can be transferable to another location in Zambia or beyond. I addressed this subject

of transferability in the section that follows for me to ascertain whether my research questions, objectives, research methods and conclusions can be obtainable in other parts of the country.

### **4.9.3 Transferability**

According to Stahl and King (2020), transferability is the ability of the findings of a research study to apply to another research context or study. It is the equivalent of generalisation in quantitative studies (Johnson et al., 2020). Since the sample size in qualitative research is usually small, and an interpretivist paradigm is used, it is appropriate to use transferability rather than generalisation, as the former is usually applied in qualitative research while the latter in quantitative research (Abdalla et al., 2018; Nassaji, 2020; Ngozwana, 2018). In this study, I provided descriptions of factors regarding sampling, data collection and analysis, as suggested by Johnson et al. (2020). A detailed step-by-step data collection and analysis procedure has been provided so that other scholars in future who decide to apply qualitative research approaches similar to the ones I have employed in this research can also find similar answers to their research questions and problem. Applying this strategy in the research process also brings about the idea of confirmability which I elaborate on the next section.

### **4.9.4 Confirmability**

This study also adopted a principle of confirmability that has enabled me to record data as it was being collected from participants with minimal misrepresentations. According to Abdalla et al. (2018), confirmability is a description of the extent to which a study is neutral, and its findings are a true reflection of the participants' views and opinions, rather than the researcher's biases, motivations and interests. It was therefore vital that I reduce to the minimum the influence that my weaknesses could have negatively affected the results of the study, by meeting the standards of rigour, such as cross-checking, use of multiple methods of data collection and analysis, and peer review (Johnson et al., 2020; Ngozwana, 2018).

This study endeavoured to apply Nassaji's (2020) suggestion of "describing data and the findings in such a way that their accuracy can be confirmed by others [through an] audit trail" (p. 429). A record of an audit trail, alluded to by scholars (Abdalla et



al., 2018; Johnson et al., 2020; Nassaji, 2020; Ngozwana, 2018), with the steps taken and the decisions made in the data collection and analysis has been provided in this study for future evaluation by other scholars. This enabled the research findings of this study to be credible and trustworthy. In order to ensure that credibility, dependability, transferability and confirmability in the research process are adhered to, a researcher needs to take care of ethical issues in the research.

#### **4.10 ETHICAL CONSIDERATIONS**

The term “ethics” according to Okeke, Omodan and Dube (2022) is “understood to involve the values and principles by which a determination of what is right and what is wrong is made” (p. 170). Atkinson’s (2015) argument also agrees with the suggestion by Okeke et al. (2022) who conclude that research ethics is fundamental to the research process and cannot be ignored by any researcher and it has countless variables. This includes asking for permission from participants through gatekeepers and ensuring that all research processes are conducted with high levels of integrity (Okeke et al., 2022, p. 170). Ethics is therefore more concerned with acceptable and unacceptable behaviour in conducting research by researchers and participants.

Notwithstanding the research approach that a qualitative enquiry adopts, a researcher is faced with hundreds of ethical issues to consider before, during and after data collection as suggested by Atkinson (2015), Holmes (2020) and Mason (2018). James and Prout (2015) recognise several issues that a researcher in a qualitative inquiry should consider, such as children’s agency, access to the field, procedures for obtaining informed consent, confidentiality, anonymity, reciprocity and reflexivity. Okeke et al. (2022, p. 170-172) have included other aspects to consider not discussed by other scholars such as mitigation of potential harm, freedom of participation and humanity. All these add value to the research process and enhance its credibility and trustworthiness. It is, therefore, vital that the researcher keeps in perspective the identified issues in the research, especially where young children are involved (Ngozwana, 2018; Spencer et al., 2020). This study endeavoured to follow all laid down guidelines on acquiring ethical clearance from the College of Education Ethics Research Committee of UNISA in accordance with the university research policy and regulations.

#### **4.10.1 Children's agency**

Agency is one of the most significant aspects in any study that involves children as it views them as competent social actors of their own lives (James & Prout, 2015). Scholars in the field of early childhood have championed studying children 'in their own right' and not just as 'receptacles of adult ways of life' (Christensen & James, 2017; Graham et al., 2016; Hammersley, 2015). This characterisation of children and childhood allows researchers to respect children's views and see them as participants and not passive actors as suggested by Hammersley (2015). The implication of upholding children's agency is that a researcher ensures that rights of children in the research field are not taken advantage of but are respected as full human beings and not as human becomings (Atkinson, 2015; James & Prout, 2015; Norozi & Moen, 2016).

In this study, I endeavoured to respect the agency of children which allowed me to give them a special place in the research as participants and not as passive actors. I listened to their voices and actions during the observations of lessons that teachers had planned and delivered in the classrooms or outdoor. I made effort not to undermine anything that children put across in favour of adult explanations of what was prevailing during lessons and free play. As much as possible, I tried to strike a balance between what the teacher participants were portraying in relation to children's way of perceiving the activities that take place in their learning spaces. During lesson observations, there were times when a learner knew a different method of playing a game as opposed to what the teacher knew. As a researcher, I ensured that the voice of the child was heard by insisting that the method of play known by the learner be explored in order to see benefits from it in relation to our research problem and the acquisition of emergent literacy as well as numeracy skills. Notwithstanding the importance of children's agency that each researcher endeavours to uphold, getting access to the field is another serious matter for consideration.

#### **4.10.2 Access to the field**

Access to the field can present serious challenges to a qualitative researcher if not well planned (Graham et al., 2016; Mason, 2018). Christensen and James (2017)

argue that the field of research that any researcher wants to conduct their studies in has rules and regulations on how it can be accessed. It is therefore vital that researchers plan carefully on how they can get access to the participants without breaking the law of the country or community where the participants reside or work (James & Prout, 2015; Mason, 2018). I also followed the same pattern suggested by Atkinson (2015), Christensen and James (2017), Graham et al. (2016), Hammersley (2015) and Mason (2018) on seeking permission from gate keepers of the research field such as school principals, government officials and other local leaders of a particular community or area one intends to study.

As suggested by Hammersley (2015), “any researcher has to identify and resolve a whole range of issues in the research process” such as getting access to the field. Before embarking on the process of accessing information in the field, I obtained ethical clearance from the UNISA, College of Education Ethics Research Committee. I visited the office of District Education Board Secretary for Chibombo District in Central Province of Zambia, for me to obtain permission to access ECE schools/centres. The clearance letter from District Education Board Secretary was adequate for me to visit schools/centres in Chibombo District. I made great use of the District Resource Centre Coordinator who works with ECE teachers at the resource centre on Continuous Professional Development (CPDs) aspects in the district. The resource centre coordinator was very useful as he helped me identify schools that had teachers who had been practising ECE for a period exceeding four years.

The head teachers of selected schools were gate keepers that introduced me to the class teachers in ECE centres. Through head teachers, I gained access to teachers and requested them to participate in the study. The teachers accepted my request without anyone coercing them. Participants who agreed to take part in the research were given the information sheet which explained briefly what the study was about. Thereafter, they were allowed to assent or consent by signing consent and assent forms that I gave them together with the information sheet as discussed below.

#### **4.10.3 Informed assent and consent**

Okeke et al. (2022) suggest that any researcher intending to obtain information from human participants should ensure that each participant gives an informed consent for their participation in the research. Informed consent is defined as “a code of conduct through which a participant, after being adequately informed about the process, the content and proposed outcomes of the research, voluntarily assents to participate” in the study (Okeke et al., 2022, p. 171). In view of the definition from Okeke et al. (2022), Cohen et al. (2018) also suggest that it is very cardinal for participants to be allowed to choose whether they would like to participate in the study or not. According to Cohen et al. (2018, p. 122), informed consent requires that participants exhibit “competence, voluntarism, full information and comprehension” of the research problem, process and expected outcomes.

In this study, I provided the selected participants with a written consent or assent form which briefly explained the research problem, objectives and research questions. This assisted participants in appreciating the importance of the study and why they had to take part in the research. I made it clear that participation was completely voluntary, and that participants were free to choose to take part or not. The participants were also informed that they had a choice of pulling out of the study at any given time that they felt like doing so. I then made clarifications on the content of the consent form. After reading and comprehending the research problem and process, each participant signed the consent form to confirm and assent their willingness to take part in the study.

In rural Zambian schools, teachers and the school systems act as surrogate parents for the learners. Teachers advised that it would not be possible to get any response from parents with regards to parental consent as they regard teachers as owners of learners while in schools. I was also informed that on several occasions, whenever schools send written information to parents in most communities, no response is obtained from parents on issues concerning their children at school. As such, waiting for parental consent would be an activity in futility. For this reason, I did not obtain permission from the parents of the children allowing their children to take part in the

research. The teacher participants acted as surrogate parents and thus represented children with regards to assent to participate in the study.

As alluded to by Cohen et al. (2018), some communities are not so strict with rules on participating in the study. In this study, consent and assent of the parents and learners depended largely on the consent signed by teachers as they were viewed as second/surrogate parents of the children they teach in schools. I assured teachers and head teachers of the privacy, anonymity, confidentiality and safety of the children throughout the study. The study adhered to the guidelines and principles of conducting research with and for children, as advocated by different scholars (Atkinson, 2015; Graham et al., 2016; James & Prout, 2015; Ngozwana, 2018; Norozi & Moen, 2016). This study also ensured that it dealt with issues of power relations as discussed below.

#### **4.10.4 Negotiating power**

When conducting research with children, a researcher cannot proceed without considering how adults contextualise childhood in the environment that is largely controlled by adults (Atkinson, 2015; James & Prout, 2015), in this case, teachers in early childhood classes. Each researcher asks oneself on what position the children occupy in the research, either as passive or active participants in an adult controlled space (Atkinson, 2015; Christensen & James, 2017). It is equally vital to look at the position of the researcher in the research field, using certain research methods and techniques such as participant observations (Atkinson, 2015; Graham et al., 2016). Norozi and Moen (2016) also add that researchers need to view children as partners in research and not as the researched. This characterisation helps in reducing power that adults naturally have over children (Atkinson, 2015; Norozi & Moen, 2016). The power that adults wield over children cannot be ignored as not influencing the research process but can be negotiated and applied properly (Cohen et al., 2018; Graham et al., 2016; Ngozwana, 2018) for best outcomes in the research.

Considering that I was conducting research in preschool environments, it was expected that children would view me as a teacher. As shown by Norozi and Moen (2016), children tend to view adults who visit their learning environments as teachers or supervisors of teachers. This was very important for me to be aware of the take-

for-granted issues that might emerge in the process of conducting the research especially during participant observations (Atkinson, 2015; Graham et al., 2016; Hammersley, 2015).

I made effort to underscore the extraordinary place children occupy in research as active participants, and not as passive observers (James & Prout, 2015; Norozi & Moen, 2016). Spencer et al. (2020) advises qualitative researchers to balance and properly negotiate the power differential that exists between children and adults in a given research context. The advice from Spencer et al. (2020) comes due to the advantageous position that adults have over children, especially in the school environment, where learners view any older person in their classroom as a teacher, who wields much power and authority (Hammersley, 2015; James & Prout, 2015; Ngozwana, 2018; Norozi & Moen, 2016).

I, therefore, presented myself as an adult who loves playing with children without using authority of age. During all my visits to the schools, I was dressed in clothes that were less formal in order to distinguish myself from the power and authority that teachers have in schools. I took time playing with children informally to create a warm environment in the classroom. In some cases, I took turns with learners on traditional games such as nsolo, draft, waida, pada and touch that learners were involved in. In addition to being friendly and as close as possible to the children in the research, it was very important for me as a researcher to exercise high levels of confidentiality and anonymity throughout the research.

#### **4.10.5 Confidentiality and anonymity**

Anonymity means that the “participants cannot be identified from the responses given, while confidentiality entails that no one has access to the participants’ names except the researcher” (Okeke et al., 2022, p. 174). Cohen et al. (2018, p. 129) encourage researchers to ensure that “a participant or subject [remains anonymous by ensuring that] the researcher or another person [does not] identify the participant or subject from the information given”. The participants must remain anonymous in any research in order to protect the privacy of the participants or subjects in the research (Atkinson, 2015; Hammersley, 2015; Ngozwana, 2018). In fact, Cohen et al. (2018, p. 129-130) suggest that researchers should avoid using names of

participants in their reports but replace them with pseudonyms or codes that would help prevent anyone from identifying the responses in research.

In this study, I ensured that all participants remain protected from anyone who shall read the findings of this research. I assigned each participant a pseudonym or code for purposes of ensuring privacy of the participants. The participants were coded as TA1, TB1, TC1, and TD2 to mean Teacher A, Teacher B and so on. Names of schools where the participants were drawn also remain anonymous. The schools were coded as School 1, School 2, School 3 and School 4. Since I was conducting interviews, I provided a secure place for storing interview notes including my field notes from observations so that no one else apart from me could have access to the information.

To ensure confidentiality, I ensured that no discussions of the research findings were done with anyone who was not part of the study except with my supervisor and when presenting research findings. The findings were not disclosed with participants' identities nor were they written or presented in a manner that is easy for someone to identify the respondents. During and after the research, I endeavoured to reciprocate the good will from participants for showing willingness to participate in the study despite their busy schedules. I also promoted reflexivity throughout the research as shown in the discussion that follow.

#### **4.10.6 Reciprocity and reflexivity**

Conducting research in any community, be it urban or rural requires more than just ethical considerations (Mason, 2018; Norozi & Moen, 2016). According to Cohen et al. (2018), researchers should find ways of contributing to the community where research is conducted. This could be by promoting and protecting the good name of a community and ensuring that research findings help bring funding opportunities to solve certain existing problems and challenges in a community (Cohen et al., 2018, p. 236). As suggested by Cohen et al. (2018, p. 237), research with vulnerable and disadvantaged children can require a researcher to show more empathy and support such children or participants deal with their personal problems. The reason is that the research might be the only opportunity the participants have to share the experiences or situations with someone (Cohen et al., 2018, p. 236). It therefore

goes to say that such participants cannot just be left alone with enormous challenges that they share in the study (Mason, 2018). A researcher would need to feel for the participants and help them where possible (Cohen et al., 2018).

Some scholars such as Mason (2018) have argued that researchers need to find a way of reciprocating the time and effort that participants spend in a study. It is difficult to know and judge the type of reciprocity that would be fit to offer participants without being seen as buying information from them as suggested by Cohen et al. (2018) and Mason (2018). According to Cohen et al. (2018, p. 236), such help might not necessarily be financial or material help. It could be showing empathy by listening carefully to the information being shared even when the participant deviates away from the subject being studied. However, it is imperative for researchers to be careful and strike a balance as emphasised by Mason (2018) in order to avoid losing track of the focus of the study.

Reflexivity is defined as a “continuous self-scrutiny by the researcher throughout the entire process” of the research (Ngozwana, 2018, p. 25). Reflexivity demands that researchers find time and space to reflect on what has been shared in the research by participants (Mason, 2018). According to Cohen et al. (2018), research could help participants to get an opportunity to speak to colleagues about issues in their area of practice with more open mindedness than any other moment in their working life.

Reflexivity therefore works as an opportunity of reflecting on certain work ethics, culture and practice (Ngozwana, 2018). It could also be used as a way of learning from one another’s experience at work, thus improving quality of service delivery (Mason, 2018). Researchers therefore need to ensure that the issue of reflexivity is taken seriously as it is a wonderful opportunity for participants to share experiences of their community working lives (Ngozwana, 2018). Reflexivity as seen by Ngozwana (2018, p. 25) is “closely linked to trustworthiness as an indicator of research quality”. This clearly shows that reflexivity brings about credibility in the research as it endeavours to separate the views and opinions of the researcher from those that are held by participants (Ngozwana, 2018) who are the informers of any research findings and information.



This study equally applied reciprocity and reflexivity with utmost seriousness and care. I endeavoured to find ways of supporting schools with skills and knowledge on how to use certain indigenous games or traditional games to prepare and deliver lessons to ECE learners. I also tried to provide information on where to get materials for free or at low-cost that could be needed in cases where they are not available in certain areas. The group interviews or focus group discussions also offered an opportunity for participants, especially teachers to meet and share knowledge with colleagues. It also gave teacher-participants a chance to reflect on each one's teaching methods and skills on use of indigenous games in enhancing early learning in preschool learners for the acquisition of emergent and numeracy skills. Ethical considerations cannot be complete without discussing ways of mitigating potential harm and danger to research participants. The next section highlights key aspects that were vital to ensuring that participants in the study, whether teachers or learners are protected from potential harm.

#### **4.10.7 Mitigating potential harm**

In any research undertaking, causing harm to participants is inevitable (Cohen et al., 2018). Okeke et al. (2022, p. 171) suggest that “physical and conventional harm are imminent in the research process”. The harm could include loss of quality time that participants would otherwise use for other tasks in their daily lives and work (Mason, 2018). In Addition, Okeke et al. (2022) have included loss of private information as well as leakage of participants involved in the research as some of the issues that can bring serious harm to participants. In fact, it has been argued that the most common harm prevalent in research is psychological (Okeke et al., 2022). The reason for the psychological harm is that during the research process, participants can be asked questions that require them to give answers that take them back to unpleasant moments in their lives (Dixon & Quirke, 2018).

Scholarly evidence shows that some research problems can lead to anxiety in participants, stressful events participants went through in the past, betrayal of trust and in worst cases embarrassment during the research (Dixon & Quirke, 2018). Researchers should therefore analyse beforehand the potential harm that could befall participants and find ways of mitigating such harm (Okeke et al., 2022). This would require an analysis of all methods and techniques that are proposed to be

used in a study as well as each potential harm that could arise (Dixon & Quirke, 2018).

In this study, I did not encounter any serious harm during the research process except that which required the use of stones, sticks, strings and jumping during certain indigenous games. When sticks and stones were being used in children's games, I ensured that only smooth stones and sticks were used to avoid injuring children during play. I also emphasised to the teachers that each one of us would need to be very vigilant in order to see potential threats or harm before it happens. I also ensured that strings used were weak so that they easily break to avoid children getting entangled during play. Vigilance also assisted me and the teachers in ensuring that children's jumping and skipping activities were reasonable without causing serious harm to learners.

In the case of teachers, I also did not encounter any serious questions that could have led to harm or threats except for someone realising that a previous method of teaching was working or not working well for certain reasons. I ensured that all questions remained within the research problem and were focused on getting information on teaching methods that are used indigenous games. The focus also was ensuring that teachers learnt from each other on best practices of enhancing early learning through use of traditional games that were affordable and easy to use. I further ensured that no embarrassing moment came up during the focus group discussions and individual interviews. This allowed the research process to proceed without injury or harm to the participants.

#### **4.11 CHAPTER SUMMARY**

This chapter has addressed areas pertaining to the research methodology that has supported this study in order to respond thoroughly to research objectives and questions. It has addressed in detail the research design, methods and strategies of inquiry that were employed in this research. The chapter has provided the appropriate qualitative approach adopted in this study, including discussing reasons for the choice made. The decisions made on the research design, data collection methods and procedures including data analysis have also been discussed in detail. In addition, the population of the study, sampling techniques/procedures and sample

size have equally been described. The chapter has also endeavoured to address advantages of selecting specific data collection techniques and strategies. Issues to do with pitfalls that every emerging scholar, master and doctoral students should be aware of during the research process have also been addressed. It has also shown techniques or strategies that were used to ensure data credibility, dependability, transferability and trustworthiness. The chapter has provided strategies that have been used in gaining access to the research field and research ethics that were applied in the study. Overall, the chapter has presented methods and techniques that were applied to ensure that the research carried out was rigorous, objective and credible so that the findings would be trusted. Chapter five in the next section deals with data analysis and presentation of findings for the current study.

## **CHAPTER 5 : DATA ANALYSIS AND INTERPRETATION**

### **5.1 INTRODUCTION**

Chapter Four addressed areas pertaining to the research methodology that supported this study in order to respond thoroughly to research objectives and questions. It addressed in detail the research design chosen, an appropriate research approach, methods and strategies of enquiry that were employed in this research. Issues to do with pitfalls that emerging scholars need to be aware of during the research process were equally addressed. The chapter also dealt with data credibility, dependability, transferability, trustworthiness, and ethics in research.

In this chapter, I present the findings of this research including providing a discussion of each of the findings. The primary goal of this study was to investigate the role that indigenous games play in enhancing early learning among preschool learners in Chibombo District of Central Province in Zambia. The focus was to ascertain whether the use of indigenous games can enhance the acquisition of emergent literacy and numeracy skills in preschool learners. The idea was to develop a model that teachers in preschools would use to teach emergent literacy and numeracy skills using local games that are familiar to the learners, especially in rural and low-income communities who cannot afford Western and Eurocentric teaching/learning materials.

The outline of this chapter covers an introduction which has discussed how data was collected and how theories played a significant role in the research process. The chapter continues with data preparation for analysis, data analysis framework and how data was analysed. Thereafter, the chapter presents the findings of the study beginning with findings from interviews, followed by focus group discussion, observations and document analysis. The chapter closes with a chapter summary. I begin by making an application of the theoretical framework of this study and data collection in the next section.

### **5.1.1 Application of theoretical framework during data collection**

The theoretical framework provided a lens through which I observed lessons and dealt with the ambivalences that emerged during data collection. Indigenous Knowledge Systems (IKS) in Section 3.2.1 helped me to discover traditional games (Moloi *et al.*, 2021; Nxumalo & Mncube, 2019) that were locally familiar to both the learners and teachers. IKS also assisted me to find out how teachers made use of traditional games during the research process. The traditional games that were familiar to the learners but unfamiliar to the teachers were equally encouraged for learning to take place in a natural way. Some learners showed skills in playing games that some teachers were unfamiliar with. Teachers who showed lack of knowledge on certain traditional games were oriented on how to play them for lessons to be productive and helpful to all.

Jean Piaget's theory of play in Section 3.3.0 worked as a mirror in assisting me to gather data using traditional games by showing that learners are active participants (Bonel & Lindon, 2014; Munsaka & Kalinde, 2017; Piaget, 1970) in their learning environment. As argued by Bodrova and Leong (2019), Piaget's theory of play shows that children learn from imitating adults and their own peers. For this reason, in this study, I ensured that children remained active participants in the classroom and outdoor activities designed by teachers. I made suggestions on how teachers could handle learners and ensure that learning was taking place with all learners participating in traditional games. During both indoor and outdoor activities, learners imitated teachers and fellow learners on how a game was to be played. Teachers also used this opportunity to involve all learners in classroom activities including those who seemed withdrawn during other lesson strategies and methods that had less play in them. This promoted active participation of all learners in lessons especially as children love to play more than didactic learning (Matafwali & Mofu, 2023).

The sociocultural theory by Lev Vygotsky (Nilsson & Ferholt, 2014; Ryoo & Kekelis, 2018; Selmi *et al.*, 2015; Vygotsky, 2016) in Section 3.4.1.1 was equally of significant importance in the data collection process of this research. This theory postulates that children seek for interaction with adults from birth onwards, and that child

development occurs through such interactions (Ryoo & Kekelis, 2018). The social interaction experienced by learners in classroom activities including outdoor play helped them build on the knowledge that they brought from home. Learners were able to request teachers that they show them how a specific game was played at home. This allowed teachers to find ways of working as scaffolds in the learning process as they used learners' knowledge on traditional games to teach a specific skill in class. The application of certain unknown traditional games to teachers became more manageable during indoor and outdoor activities. I now shift my attention to discussing data preparation for analysis in the next section.

## **5.2 DATA PREPARATION**

Data preparation is a key aspect of data analysis, interpretation, and reporting of findings (Cohen et al., 2018). It requires adequate preparation including reflecting on what would be more practical depending on the research problem being studied and the theoretical framework adopted (Mason, 2018). The research design also informs the best methods of data preparation that would help in making reasoned analysis with minimum biases (Cohen et al., 2018). In qualitative research, this entails, creating data that is clean by ensuring that transcripts from interviews, focus group discussions, field notes, document analysis, photos, and any other sources are clear and readable (Cohen et al., 2018; Mason, 2018).

A researcher is also required to read and re-read the transcripts for one to be more familiar with the findings (Creswell, 2014; Mason, 2018). This would allow one to make comments and add immediate reactions to the transcripts (Cohen et al., 2018). The making of comments to transcripts at this initial stage is followed by capturing emerging themes and notes in the data. The data is then combined from all participants on a specific question into a single file that is analysed.

In this study, interviews, focus group discussions and observations were transcribed by listening to the audios and videos to capture every single word that was used by the participants. Interview transcripts generated from all the ten participants were cleaned by ensuring that all statements from participants were captured. This enabled me to clearly understand what each participant referred to on each question asked. It also helped me to recall the gestures or reactions of each participant on

specific topic issues. I was then able to add comments on each aspect based on what I recalled as participant reactions.

Focus group discussions were equally transcribed by listening to the recordings repeatedly. Each session had its own transcript from the first question asked to the end of the discussion. Patterns of the responses were then looked at to check for emerging themes that were used later during analysis as guided by Cohen et al. (2018). A similar process was done for lesson observations and document analysis data. Files were created for each analysed document such as schemes of work, lesson plans, records of work, and daily routines.

Data from all participants in all four methods of data collection used in this study were coded using codes that ensured that the anonymity of each participant was assured. The identity of all the participants was hidden by pseudonyms or codes as shown in Table 5.1 below.

**Table 5.1: Participant codes or pseudonyms**

Research Tool(s)	Participant and Code(s) (Pseudonyms)									
	1	2	3	4	5	6	7	8	9	10
Interview	TA1	TB1	TC1	TD2	TE2	TF3	TG3	TH3	TI4	TJ4
Focus group discussion	FGD2	FDG2	FGD2	FDG2	FGD2	FGD1	FGD1	FGD1	FGD1	FGD1
Observations	OB1	OB2	OB3	OB4	OB5	OB6	OB7	OB8	OB9	OB10
Document analysis	DA1	DA2	DA3	DA4	DA5	DA6	DA7	DA8	DA9	DA10

*Source: G.M Mwinsa*

Interview data was coded as TA1 to mean participant number A of the ten participants as shown in Table 5.1 above. The same was done for all the ten participants from all the four schools that took part in this study. Focus group discussion were in two sessions such as FGD1 and FGD2 representing the five participants per group discussion. Observation notes were coded as OB1, OB2 and OB3 to mean an observed lesson of Participant 1 of all the ten participants. For document analysis, the codes included DA1, meaning that the participant was the number 1 of all the ten participants.

The prepared data was analysed thematically using manual analysis and a computer assisted software, ATLAS.ti 23 as shown in Section 4.7.7. This was done in order to reduce errors and ensure that data was analysed accurately and correctly. The analysis of data in this research adopted appropriate methods of data analysis or analysis framework. The next section discusses the data analysis framework that this study adopted for it to make meaningful and reasoned conclusions on information from the research field on how indigenous games enhance learning in preschool learners.

### **5.3 THEMATIC DATA ANALYSIS FRAMEWORK**

Thematic data analysis is one of the most frequently used analysis frameworks in qualitative studies (Lochmiller, 2021). It is defined as “a method for identifying, analysing and reporting patterns (themes) within data” (Lochmiller, 2021, p. 2029). Experienced researchers argue that thematic data analysis is the foundation method in qualitative research especially for novice researchers such as Master and Doctoral candidates (Braun & Clarke, 2014; Majumdar, 2022). Majumdar (2022) suggests that thematic data analysis should be learnt and used by all qualitative researchers as an initial data analysis technique as it provides the basic skills that are vital in learning how to analyse data using other forms of analysis. Thematic data remains a divergent, compatible, and much more flexible research tool as compared to the other qualitative techniques (Cohen et al., 2018; Hennink et al., 2020; Lochmiller, 2021; Majumdar, 2022).

Thematic analysis is a method of analysing qualitative data that involves reading through a set of data and looking for patterns in the meaning of the data to find themes (Dube & Shawe, 2022; Lochmiller, 2021; Mason, 2018). It is a systematic and organised way of analysing complex data sets through reading and re-reading of the transcribed data (Cohen et al., 2018; Lochmiller, 2021). This approach of data analysis is vital as it allows rigorous analysis of qualitative research data making it possible to produce insightful and trustworthy findings in a study (Mason, 2018). As such, this method of data analysis creates a rich, detailed, and complex account of data set (Lochmiller, 2021; Majumdar, 2022).

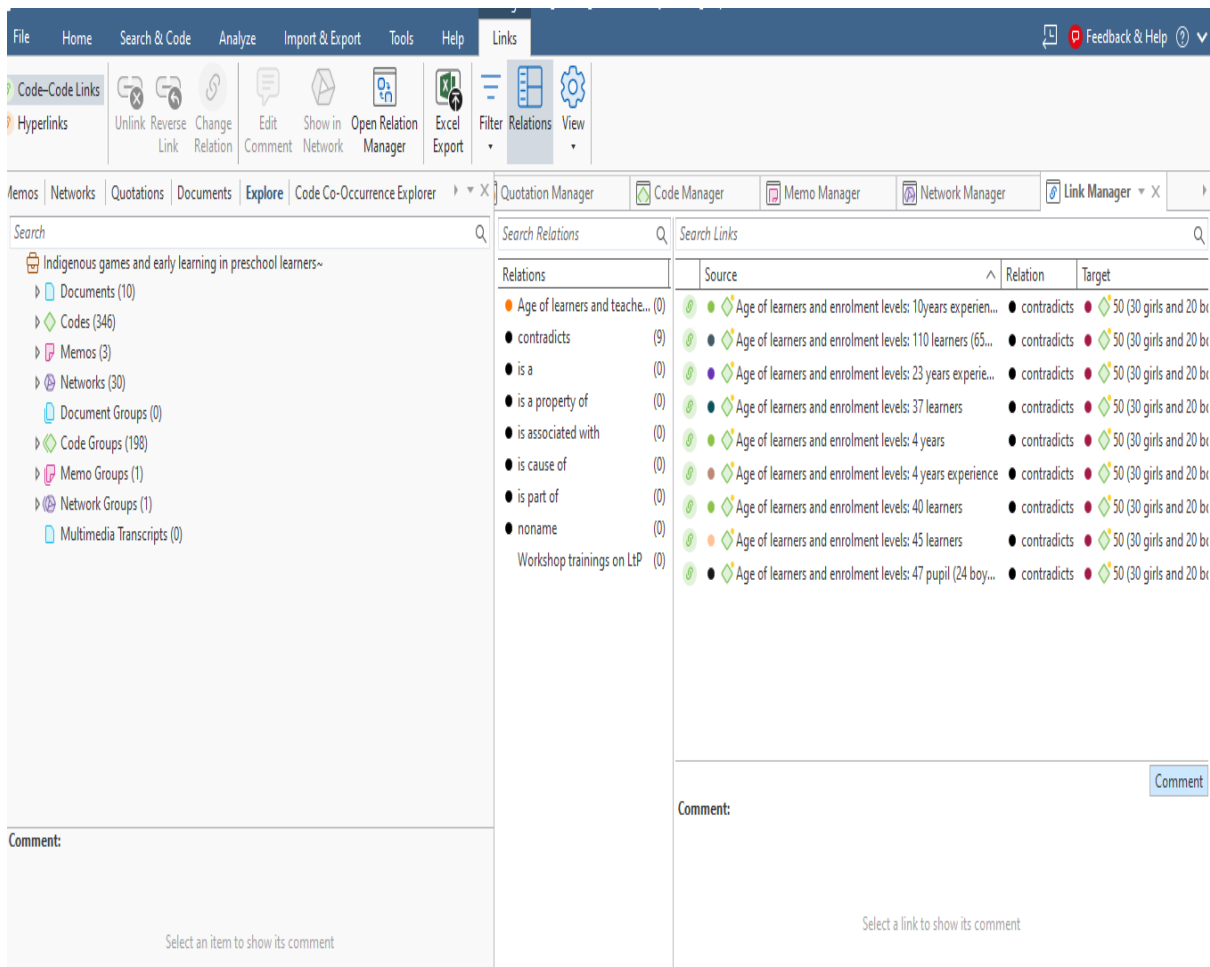


The main goal of using this analysis approach is “to consider how the reported information [or data] addresses a specific research question or invites a new conceptual or theoretical understanding” (Lochmiller, 2021, p. 2030). Thematic data analysis approach enables researchers to look at data as a social construction rather than concentrating on differences that are embedded in individual participant experiences (Braun & Clarke, 2014; Hennink et al., 2020). Interestingly, thematic data analysis is “fundamentally question-driven exercise” that is concerned with peoples “experiences, meanings and reality” (Lochmiller, 2021, p. 2030) that they attach to their daily lives.

This approach was chosen as a data analysis framework for this study due to its appropriateness in interpretivist research paradigms. Thematic data analysis was also appropriate for this study as it was explanatory in nature, an approach that this study chose. As shown in Sections 4.7.1 to 4.7.6 of this thesis, thematic data analysis approach was used by following the six steps of: (1) familiarising oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) classifying responses under the same theme, and (6) integrating themes and responses into the text of the report/thesis. Details of the step-by-step approach that was followed in analysing data in this study were dealt with in the next section.

### **5.3.1 How data was analysed**

In this study, data was analysed using a thematic analysis framework stated in Section 5.3 above. Initially, data was analysed manually using guidelines from the six steps of analysing qualitative data using a thematic analysis framework presented earlier. ATLAS.ti 23, a computer software for analysing qualitative data was also used to analyse data side by side with manual analysis as shown in Section 4.7.7. Below is Figure 5.1 showing a snip of the screen of the imported data into ATLAS.ti 23 that was used to analyse data from interviews, focus group discussions, observations, and document analysis?



**Figure 5.1: A snip of the project imported into ATLAS.ti 23 for this study**

*Source: G.M Mwinsa*

I chose this approach of data analysis in order to verify and validate the appropriateness of manual data analysis framework. Before importing the data into the software, I started with reading and re-reading of the collected data to familiarise myself with the findings in the data. The next step required me to generate initial codes from the transcripts of the data. Using ATLAS.ti 23, some of the codes that were generated are shown in the figure below.

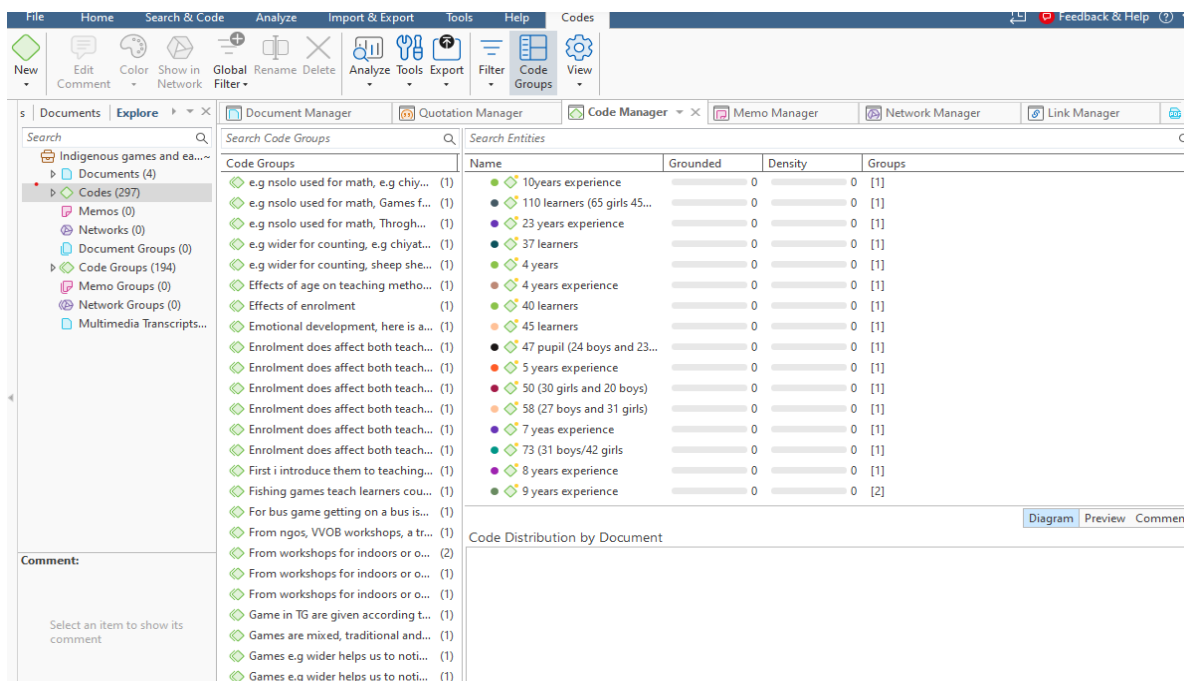


Figure 5.2: shows some of the initial codes from ATLAS.ti 23

Source: G.M Mwinsa

The initial codes were also generated manually as shown in Figure 5.2 below. Below are some of the initial generated codes that helped me to come up with the list of themes that are presented in this study.

Table 5.2: Some initial codes generated from manual analysis

Initial codes from the data
Over enrolment
Teaching methods
Teachers need to be creative, innovative and resourceful
Teaching and learning resources
Learner abilities
Play-based teaching
Learner involvement and manipulation
ECE curriculum
Songs and games for teaching and learning
Locally available materials
Learning outcomes
Continuous professional development (CPDs)
Learner skills in literacy and numeracy
Skills such as identification of sounds, letters, counting and naming, number sense
Learner participation
Emergent literacy like sounds, letter awareness, phonics, phonology, vocabulary, sentence construction, reading, writing and speaking
Story telling
Teacher interactions with learners

Initial codes from the data
Lack of familiarity to local or traditional games by teachers
Stereotyping by primary school teachers, administrators and community members on play in ECE
Lack of innovation and creativity in some ECE teachers
Lack of knowledge on ECE practice by community members
Indoor and outdoor learning environment
Physical, social-emotional and cognitive development of learners
Holistic child development

*Source: G.M Mwinsa*

After initial codes were generated, I searched for themes and validated them. I did this by linking the codes to research objectives and questions in order to ensure that the study aims, and goals were achieved. A list of themes is shown below:

**Table 5.3: Themes from the data**

	Themes
1	Indigenous games preschool teachers use in teaching emergent literacy and numeracy skills
2	Indigenous games as a pedagogical approach for teaching emergent literacy and numeracy skills
3	Challenges teachers face when using indigenous games in teaching
4	Intervention measures teachers can use to deal with challenges faced

*Source: G.M Mwinsa*

The themes in Table 5.3 above were validated through conducting of “member checking” (Dube & Shawe, 2022, p. 154). I did the member checking by comparing the themes with data transcripts and audio recordings of interviews and focus group discussions to verify that the themes I had come up with were indeed views from participants. This helped me to ensure that my study was trustworthy and credible. It also assisted me in ensuring that the findings were useful for improving the pedagogical approaches that teachers use in teaching literacy and numeracy skills to learners.

The next vital step that I took in analysing data and presenting findings was reviewing themes and linking them to previous studies. I did this during the discussion of findings as shown in Section 6.3. I read scholarly works on indigenous games, traditional games, learning through play, and play-based teaching and learning. The scholarly works helped me to appreciate various theories, methods

and ECD settings helpful in enhancing early learning in preschool learners. I proceeded to classify responses from participants for interpretation and inclusion in this thesis. The section that follows presents data from the research starting with contextualising the research site. The research site context is followed by presentation of findings from interviews, focus group discussion, observations, and document analysis.

## **5.4 DATA PRESENTATION**

Data presentation in any research undertaking is vital and key to informing readers on the findings of a study. It is the process of presenting analysed data, mostly in themes and sub-themes or categories in an illustrative and descriptive manner (Cohen et al., 2018; Creswell, 2014; Mavuso & Adu, 2022). Mavuso and Adu (2022) argue that qualitative researchers need to “gather enough data for them to meet the requirements of qualitative research” (p. 185). This requires researchers to interact widely with participants for them to understand the complex situation that the studied environment or community find themselves in (Hennink et al., 2020; Mavuso & Adu, 2022). Data should be presented in line with research questions and objectives and in a manner that assists the researcher to respond to set objectives (Mavuso & Adu, 2022).

As stated earlier, qualitative data requires that it is presented in themes or quotes or categories with explanations to each theme or code presented (Cohen et al., 2018; Mavuso & Adu, 2022). This section presents data obtained from the four rural schools (ten teacher-participants) that took part in this study. I begin with a discussion of the research context of the four schools under study.

### **5.4.1 Description of the research sites**

This study was conducted in Chibombo District of Central Province in Zambia. The district was largely rural and had a small area that was becoming peri-urban and urban in nature. The district had over 200 public and community schools. There were 189 public primary and community schools from which the four schools that took part in this study were selected. The next section gives a detailed context of the schools in this study.

#### 5.4.1.1 The contexts of the schools in this study

This section presents the setting of the research site and provides an insight into the communities that the schools in this study served. The four schools in this study were rural based and largely disadvantaged with low-income communities surrounding them. Two schools out of four had a small semblance of peri-urban communities that were slowly rising. The environment or context of each of the schools in this study posed significant challenges in accessing modern Eurocentric materials making indigenous games more accessible to the teachers and learners. Each of these schools had enormous challenges ranging from teacher-pupil ratio to a lack of materials and teaching spaces for both indoor and outdoor activities. School 1 had enough space for outdoor play; however, the space was also used by adult learners in primary and secondary section making it difficult for teachers to prepare the space for ECE activities only. School 2 had a similar situation with small play space which was un-demarcated for ECE and adult learners' use. Schools 3 and 4 had no outdoor space due to constructions that were ongoing around the school environment to accommodate more learner's classrooms. Overall, the classroom spaces were not adequate due to over enrolment. Table 5.4 has a description of each of the schools.

**Table 5.4: Contexts of the school setting**

	Description of the school setting
<b>School 1</b>	Has adequate outdoor play spaces with a well-maintained classroom. The playground is also used by adult learners in grade 1 to 9.
<b>School 2</b>	Has adequate outdoor play spaces. The playground is also used by adult learners in grade 1 to 9. The school has a dilapidated classroom for ECE
<b>School 3</b>	Inadequate outdoor play spaces due ongoing constructions. The playground is also used by adult learners in grade 1 to 9. The school has adequate classroom spaces
<b>School 4</b>	Inadequate outdoor play space and small classroom. The school has no playground due to ongoing construction of classrooms.

*Source: G.M Mwinsa*

As suggested by Creswell (2014), it is very vital for a researcher to understand the context that the research participants live and work in order to appreciate how the environment affects their lives daily. This is important as shown by Lochmiller (2021) who argued that nurses under study made certain clinical decisions based on the availability or non-availability of certain equipment in the health facility. As such,

understanding the environment and community that teachers operate in would assist researchers to make meaningful conclusions that would help improve learning and teaching outcomes in schools. The context of the research site also requires that participants are also described. The next section endeavours to provide a detailed description of the participants who participated in this study.

#### 5.4.2 Description of participants

The ten teachers who took part in this study were trained in Early Childhood Education at different levels. Table 5.5 shows biographical information of the ten participants who took part in this study.

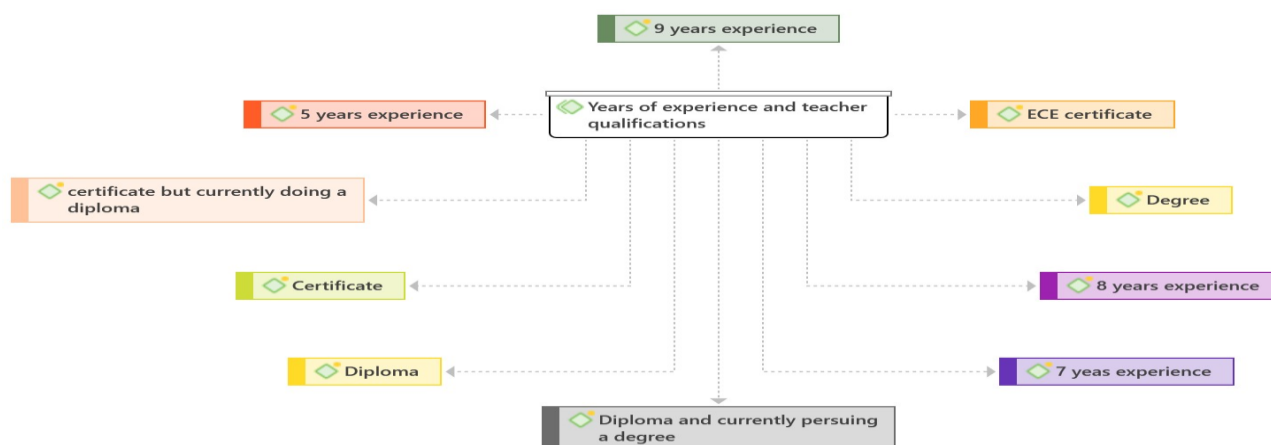
**Table 5.5: Bio-data of the participants**

School	Participant	Class Taught	Age of Learners	Qualifications of Teachers	No. of Years in-service	No. of Learners
School 1	TA1	Reception	5-6 years	Degree	10	40
	TB1	Middle Class	3-4 years	Certificate	9	37
	TC1	Middle Class/Reception	3-6 years	Certificate	20	38
School 2	TD2	Middle Class/Reception	3-6 years	Diploma	4	47
	TE2	Middle Class/Reception	3-6 years	Certificate	8	45
School 3	TF3	Reception	5-6 years	Diploma	7	110
	TG3	Middle Class	3-4 years	Diploma	4	70
	TH3	Reception	5-6 years	Certificate	5	73
School 4	TI4	Middle Class/Reception	3-6 years	Certificate	4	58
	TJ4	Reception	5-6 years	Certificate	9	52

*Source: G.M Mwinsa*

One of the teachers had a Bachelor of Education degree, three teachers had diplomas while six teachers had certificates in ECE. Out of the ten teacher-participants, only two teachers taught classes that had less than 40 learners and the rest had above 40 learners as shown in Table 5.5 above. In some cases, some teachers had up to 110 learners making it difficult for one to provide quality education to the learners. The age of the learners seemed to be appropriate for each level of education such as 3-4 years in middle class and 5-6 years in reception. The distribution of teachers in each school in the district is uneven. School 1 had three teachers, School 2 had two teachers, and School 3 had three teachers while School 4 had two teachers.

All teachers in this study had more than five years of teaching experience in ECE. All teachers were qualified to teach ECE learners as they underwent training in teacher training institutions for preschool teachers. The ad hoc network below shows teachers' experiences and their qualifications in teaching ECE learners.



**Figure 5.3: Ad hoc network of teacher's work experience and qualifications.**

*Source: G.M Mwinsa*

Figure 5.3 is an ad hoc network that shows that teachers in this study had at least five years of teaching experience in ECE. It also shows that all teachers were trained in ECE and had relevant minimum requirements for them to teach in preschools. The lowest qualified teachers had certificates in preschool training while the most qualified teacher had a first degree in ECE. I now shift my attention to presentation of findings in line with research objectives and research questions of the study.

The presentation of findings in this study was guided by the research objectives listed below.

1. To ascertain indigenous games that teachers use to promote the development of literacy and numeracy skills in preschool learners in Zambia;
2. To determine how indigenous games can be used to promote the acquisition of literacy and numeracy skills in preschool learners in Zambia;



3. To identify the challenges that teachers face in using indigenous games in their day-to-day teaching of preschool learners;
4. To identify the intervention measures that teachers can use to incorporate indigenous games in their day-to-day teaching of preschool learners.

The objectives of this study were linked to the themes that emerged from the data in order to allow for easy analysis and interpretation of findings. The table below shows the link that was made to show how themes were related to the objectives of the study.

**Table 5.6: Themes and sub-themes that emerged from the data**

S/N	Objectives of the study	Themes	Sub-themes
1	To ascertain indigenous games that teachers use to promote the development of literacy and numeracy skills in preschool learners	Indigenous games used in teaching literacy and numeracy	<ul style="list-style-type: none"> <li>▪ Counting and number games</li> <li>▪ Traditional games and rhymes</li> <li>▪ Memory and matching games</li> <li>▪ Role playing and dramatic play</li> </ul>
2	To determine how indigenous games can be used to promote the acquisition of literacy and numeracy skills in preschool learners	Indigenous games as a pedagogical approach for literacy and numeracy skills	<ul style="list-style-type: none"> <li>▪ Teaching and learning approaches</li> <li>▪ Use of traditional games by ECE teachers</li> <li>▪ Benefits of using traditional games in teaching preschool learners.</li> </ul>
3	To identify challenges that teachers face in using indigenous games in their day-to-day teaching of preschool learners	Challenges teachers face when using indigenous games in teaching.	<ul style="list-style-type: none"> <li>▪ Classroom and outdoor challenges.</li> <li>▪ Age of learners</li> <li>▪ Pedagogical challenges</li> <li>▪ Lack of Knowledge and skills.</li> <li>▪ Lack of Creativity, innovation and resources.</li> </ul>
4	To identify intervention measures that teachers can use to incorporate indigenous games in their day-to-day teaching of preschool learners.	Intervention measures teachers use to deal with challenges faced	<ul style="list-style-type: none"> <li>▪ Strategies to improve teaching of emergent literacy and numeracy</li> </ul>

*Source: G.M Mwinsa*

The objectives of the study guided the analysis of data in connection to themes and sub-themes of each objective as shown in Table 5.6 above. I now move to present findings in line with the methods of data collection and research protocol used as guided by themes and sub-themes linked to research objectives. I commence with data obtained from interviews in the next section of data analysis and presentation of

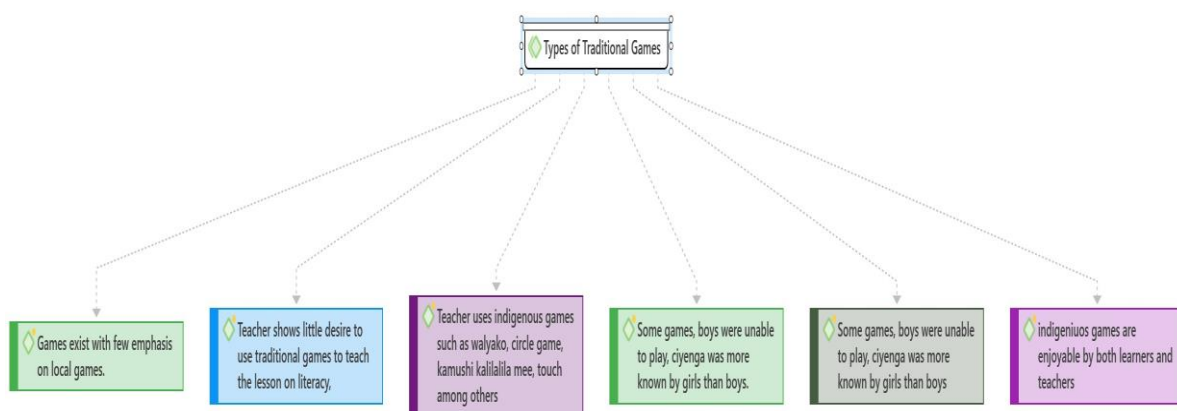
findings. I present the findings using the four themes presented in Table 5.3 and the sub-themes that emerged from the data as shown in Table 5.6 above.

### 5.4.3 Data from interviews

Interviews in qualitative studies are some of the most popular ways of gathering first-hand information from individual participants. They are generally used as means of getting views from participants by having one-on-one discussions on topical issues a researcher is studying. In this study, the findings from interviews are presented using themes and sub-themes that emerged from the interviews during the data analysis process. The themes and sub-themes informed the study on how indigenous games can be used to enhance early learning in preschool learners. This section discusses the themes and sub-themes that were categorised in a manner that they respond to each objective of the study. I begin by discussing Theme 1: Indigenous games used in teaching literacy and numeracy with its sub-themes.

#### 5.4.3.1 Theme 1 – Indigenous games used in teaching literacy and numeracy

A recurring theme that emerged from the interviews, was the Indigenous games preschool teachers use in teaching literacy and numeracy. This theme discusses the indigenous games that teachers use in teaching literacy and numeracy skills to preschool learners. Teachers shared indigenous games that they use when teaching emergent literacy and numeracy skills to preschool learners. Figure 5.4 below shows an ad hoc network of types of traditional games identified by participants in this study.



**Figure 5.4: Ad hoc network showing types of traditional games**

*Source: G.M Mwinsa*

The identified games in ad hoc network in Figure 5.4 were found to be appropriate teaching skills in counting, numbers, rhymes, matching and role playing which emerged as some of the sub-themes of Theme 1. From the theme, four subthemes emerged, namely, counting and number games, traditional games and rhythms, memory and matching games and role playing and dramatic play. I discuss each of the sub-themes below.

#### 5.4.3.1.1 Sub-theme 1: Counting and number games

In this study, interviews with teachers raised several pertinent issues with regards to games that teachers use in order to teach counting and numbers in preschool learners in Chibombo District. Participants stated that teachers found it very interesting to use both *nsolo and wider because they* teach numeracy concepts such as counting and numbers, *pada teaches imagination, memorising and measurements, and finally chiyato or chiyenga* teaches addition and subtraction. Each of the stated games is discussed below.

##### 5.4.3.1.1.1 Nsolo and wider or waida

In this study, when participants were asked to identify games that can be used to teach numeracy skills such as counting and numbers, *nsolo* and wider or waida were found to be some of the most used traditional games. Both *nsolo* and wider or waida games are said to be the most popular games that teachers use in preschools to teach numeracy skills. Participant TF3 from School 3 had this to say, *“I always use nsolo to teach counting of numbers to learners in my class, they seem to enjoy the game since I teach reception class”*. Another participant from school 4 stated that she *“finds nsolo and pada very useful in teaching mathematics to her learners”* [T14]. She hastened to add that *“the problem is with younger learners who have some difficulties playing nsolo”* due to age.

Participant TJ4 described how *nsolo* game is played. *She explained that “the game of nsolo is played by putting stones in small holes usually made on the ground in a series. There are usually six to eight holes per line with each player having two lines of play. As learners play the game, they count, add and subtract stones from either side of the game lines”*. This game is sometimes referred to as the board game or is similar to the board game. *“Learners pick stones from the first hole on the far right and place each stone in one hole towards the left side until the stones picked are finished”* added participant TJ4.

All the teachers from School 1 indicated that they make very good use of *nsolo* when teaching different mathematical concepts. Participant TA1 stated that her learners *“find nsolo very interesting to play even though it is mostly played by boys than girls”*.

Participant TC1 equally agreed with TA1 and TB1 when she also explained that *“nsolo is one of the most used local games to teach mathematics”* to her preschool learners. Teacher TB1 from the same school as TA1 and TB1 clarified that she rarely uses nsolo game because *“in middle class, learners are too young to comprehend the rules of the game”*. As such, she uses alternative games such as the fishing game and bus game to teach mathematics to middle class learners.

On the other hand, other participants said that besides nsolo game, they also use wider or waida to teach certain mathematical concepts. Teacher TD2 equally stated that she uses wider to teach certain mathematical concepts. She explained that *“games such as waida are used in teaching of counting and numbers”* in preschools [TD2]. She said that *“waida is a game that is played by having a rope held by two people on each end....., it is accompanied by songs that have counting in them”* [TD2]. She further indicated that *“songs they sing enable players of the game to count how many times the player has skipped the rope or failed to skip.*

The data from the participants indicates that preschool teachers make very good use of the game of nsolo and wider or waida to teach specific mathematical concepts such as counting, numbers, addition, subtraction and measurements. I also learnt in the study that teachers have learning levels of certain games such as nsolo and wider or waida are used for. In most schools, the game of nsolo and wider or waida were said to be used by teachers who taught reception class learners than middle class learners.

#### 5.4.3.1.1.2 Pada

Pada is an important game used to teach numbers and counting skills to preschool learners. According to the teachers at School 4, the *game of pada*, *“uses boxes that are drawn on the floor of the classroom or the playground with clear marks. Each learner can play the game with eyes closed”* [T14]. T14 continued narrating that:

*“... the one playing starts from one end of the boxes and moves with the head facing upwards to ensure they do not attempt to see the lines of boxes. Each box is labeled with numbers from one to ten depending on the number being taught in that week. As the learner moves from one box to another, he or she must be asking the peer a question, “Am I?” If the player in the game does not*

*step on the line, the peers will be responding with an affirmative, “YES”. If the player steps on the line, the peers will stop him or her from playing by indicating, “NO”. Each player who loses is required to say the number that is indicated on the box where they are standing”. [TI4]*

The game of *pada* helps teachers to teach numeracy skills such as “*counting, numbers, imagination, memorising and measurements in mathematics*” as suggested by most of the participants in this study. TB1 informed this study that “*the game of pada is also used to teach mathematics*”. She is also supported by TE2 who equally found the game of “*pada useful for teaching mathematical concepts*” such as numbers and counting. The same view was held by teachers at Schools 3 and 4 who also found the game of *pada* appropriate for “*teaching numbering and measurements to their learners*” [TG3, TJ4].

In this study, I found that most teachers agreed that the game of *pada* had potential to teach mathematics to learners of all levels starting with middle class to reception. Participant TF3 said that “*since children love playing, teaching ECE learners through games such as pada makes my work very easy*”. Participant TH from School 4 shared that, “*I find teaching using such games very good because learners pay more attention than when I don’t use games*”. In fact, there was no single teacher who did not mention a game of *pada* in the interview.

#### 5.4.3.1.1.3 *Chiyato or chiyenga*

Traditional games such as *chiyato* or *chiyenga* remain significant in teaching and learning of numeracy skills in young learners such as those at pre-primary level. The game of *chiyato* or *chiyenga* used by “*teachers in ensuring that their learners acquire the necessary numeracy skills of counting and numbers need serious planning*” as indicated by participant TA1 during the interview. When participants in this study were asked to state which traditional games, they use to teach mathematics apart from *nsolo* and *pada*, the responses led to them mentioning “*chiyato or chiyenga game*” [TC1, TE2, TI4, TJ4].

TrJ explained that she uses chiyato or chiyenga to “*teach numbers from zero to 100 and counting*”. The game of *chiyenga* or *chiyato* is also used to teach addition and subtraction to young learners. Participant TB1 stated that:

“... *game of chiyato or chiyenga is played by digging a hole and placing smooth small stones in it. A player then scoops stones from a hole dug in the ground after throwing a stone in the air. The stone thrown in the air should not land on the ground without the player catching it and scooping stones at the same time*”.

Participant TE also explained that chiyato or chiyenga is also used to teach counting skills to ECE learners. She said that “*as children scoop the stones from the hole, they learn to count stones, to add, subtract, measure distance by eye, eye-hand coordination and general number sense*”. The findings of this study therefore revealed that most of the teachers used chiyato or chiyenga to teach specific numeracy skills such as counting, measuring, addition, subtraction and division. The study also revealed that local or traditional games such as *chiyato* or *chiyenga* are popular games that preschool teachers use to help learners acquire numeracy skills for use in their daily lives and for the future. Data from interviews confirmed the significance of using traditional or indigenous games in order to foster development of mathematical concepts in ECE learners.

#### 5.4.3.1.2 *Sub-theme 2: Traditional games and rhymes*

The second recurring sub-theme that emerged during interviews with teachers was traditional games and rhymes. Figure 5.5 shows word cloud that amplifies games, traditional games, play and ECE among others in Chibombo District with regards to teaching of emergent literacy and numeracy.





Other sound games and songs used to teach emergent literacy included *umulilo kulupili* (fire on the mountain) for literacy lessons. Participant TB from School 1 argued that in her lessons, she “*finds umulilo kulupili more beneficial in teaching literacy skills*”. She also indicated that she uses “*a number of traditional songs including modern songs to teach certain literacy skills*” such as “*sounds, phonics, phonology and the development of vocabulary*” to teach in young learners.

The findings in this study revealed that songs, sound games and stories that are local to a specific setting are known to play a cardinal role in teaching word sequencing, sentence construction, sounds and vocabulary and reading skills. This is vital as knowledge is constructed socially and locally through societal interactions that learners have with both teachers and their own peers.

#### 5.4.3.1.2.2 Traditional stories

Stories have a long-standing use in teaching and training at all levels of education. A participant from School 2 indicated that “*traditional stories play a vital role in improving literacy ...levels for children*” in pre-primary and primary schools [TE2]. According to teachers, acquiring emergent literacy for learners in preschool was very significant as “*all learning that takes place in schools later involves reading, writing, speaking and phonological awareness*” [TI4].

Participants TA1 argued that she uses stories when teaching literacy skills. TA1 indicated that:

*“When I am teaching literacy. For example, for me I have to tell a story, and in that story, I have to make sure that there is a sound that I am looking for. For example, I am looking for sound /c/. Children have to sound it, and also write it. We use bingo game, race game, and find my mind game. They write the particular letter on sand plates”. [TA1]*

The teacher emphasised that songs are very useful for her teaching of various topics in emergent literacy or any other subject in ECE. Participant TH3 also stated that she “*ensures that all learners are paying attention to the story and take part in sounds that she plans to teach*”. According to participant TI4, “*the learners who struggle with*

*sounds that were in a story are made to recite the story and ask them to try one more time.* The activity is repeated until all learners learn the sounds of the lesson of the day as planned by the teacher.

The findings from this study revealed that repetition of the activities was vital as it helped the learners to grasp the skills that teachers plan for. Stories were said to help learners to improve on their writing or reading skills over a period. Most importantly, there is a need to provide adequate time and effort when teaching specific skills such as sounds, seriation and expressive or receptive language.

#### *5.4.3.1.2.3 Race game*

The race game is said to be one of the games that teachers in ECE use in teaching emergent literacy. A participant from School 3 [TG3] argued that *“the race game is another game played by making a big box and placing strings on each side of the box from bottom to top. On the strings, one puts sounds..... from bottom to the top which learners are required to identify until one reaches the top”*. The participant added that the *“one who reaches the top first wins the game while the others are allowed to keep trying so that they also succeed”*. The said game is repeated several times in order to allow more learners to acquire the skill of associating correct sounds to letters of the alphabet.

The interviews also brought out some important aspects of the other game that is similar to the race game. Participant TH3 from School 3 stated that *“the race game is similar to the relay race by runners in a running race”*. Participant TH3 explained that:

*“Learners are put in groups of four or five individuals. A big box is placed in the centre of the play field with sound and number cards placed inside the box. Each group identifies the runner who would be the first to run in a group. The learners who are in a race run to the box to pick sound cards .... If the group gets it right, they win, and those who get wrong, have lost”. [TH3]*

This game enables learners to enhance their ability to make appropriate sounds of letters and pronunciation of words. It also develops number sense in learners as they

identify numbers on the cards correctly and sequence orderly. The results of such games are overwhelming as they lead to learners being able to read and write.

#### 5.4.3.1.3 Sub-theme 3: Memory and matching games

The third sub-theme that emerged during interviews with teachers was memory and matching games. The findings showed that teachers used games like *kankuluwele*, and *nyenyeezi* to teach memory and matching skills that are necessary for cognitive development in learners as they are both part of emergent literacy and numeracy skills development in preschool learners. This section explains how each game is used by preschool teachers to enhance the acquisition of emergent literacy and numeracy skills such as memory and matching as informed by all the ten participants in the study.

##### 5.4.3.1.3.1 Kankuluwele game

Traditional games remain significant in teaching and learning of emergent literacy and numeracy skills in young learners such as those at pre-primary level. Participant TA1 from school 1 emphasised that *“the games teachers use in ensuring that their learners acquire the necessary emergent literacy and numeracy skills need serious thought when one is making a choice”*. When participants in this study were asked to explain the traditional games used in enhancing the acquisition of emergent literacy and numeracy skills such as memory and matching in preschool learners, the responses from teachers portrayed that the *game of kankuluwele* was used by teachers in schools for purposes of teaching matching and memory skills in learners.

Another participant [TC1] from school 1 indicated that *“the use of different games depended on the topic or lesson they are covering in a particular week”*. A participant from school 4 added that she uses the *“kankuluwele game to teach emergent literacy and numeracy skills”* [TJ4]. Participant TJ4 further explained that *“the kankuluwele game is played by having six to 20 players at a time. Players exchange names of each other and join hands in a circle. One player leads in song starting with the word ‘kankuluwele’ while the others respond with ‘ooh yaaye’. The player whose name is mentioned to either stand or sit needs to recall the name quickly and act as requested in the song”*. The participant added that *“all learners in the classroom are made to take part in order for each of them to try the games”*.

The findings showed that teachers found that the game of kankuluwele was appropriate for teaching literacy skill and numeracy to preschool learners. The game is repeated so many times until each learner takes part and acquires the planned skill in the lesson. The game of kankuluwele was found to support memory skills, matching skills, sequencing, motor development and number recognition including vocabulary and language development. The game was found to be very cardinal for cognitive development in preschool children.

#### 5.4.3.1.3.2 Nyenyeezi (stars)

The game of *nyenyeezi* or *stars* was found to be another popular traditional game used by teachers in many preschools in rural areas. Participant TB from school 1 argued that *“I use nyenyeezi to teach literacy and mathematics to my middle-class learners”*. The nyenyeezi game was seen as *“a very good tool in teaching of literacy and numeracy skills to learners”* in School 2 of this study [TD2]. Participant TD2 added that *“nyenyeezi game is good for preschool learners because children in rural areas are familiar with stars which they see on a daily basis when they play outdoor games at home before bedtime”*. The game also promotes social skills because children learn to interact with one another during play, added another teacher at the same school [TE2].

Another participant from School 4 [TJ] explained that *“nyenyeezi game is played by making two parallel lines according to sex of the learners. Boys form their own line and girls also do the same. The teacher or any learner starts the song while others respond. As the song continues, all learners follow with dances within the line where they are standing. When the song reaches its chorus, one identified player moves to the other side of the line to pick a dancing partner”*. This process is repeated until all learners can sing the songs and play with each other.

Participant TF from School 3 equally suggested that *“nyenyeezi game teaches counting skills as learners count the number of children in the line similar to the lines of stars in the sky at night”*. Participant TA from school 1 also indicated that *“learners also learn to memorise the songs”* which allows children to develop skills such as counting, numbers and matching. Participants from School 3 [TG] also indicated that

games like “*nyenyeezi are vital for teaching social aspects needed in learners*” from various communities in a school area.

The findings from the participants revealed that a key aspect acquired from nyenyeezi game is matching and memory as learners memorise the number of visible stars. Nyenyeezi game was also found to allow for socialisation which was vital in holistic child development. The game was also found to be important as it was seen as a cornerstone to promoting social-emotional development among learners in ECE classes. The next section discusses the fourth sub-theme of role playing and dramatic play.

#### *5.4.3.1.4 Sub-theme 4: Role playing and dramatic play.*

Role-playing and dramatic play are essential components of early childhood education, contributing to the social-emotional, physical and cognitive skills which lead to holistic development of young children. The findings in the study show that teachers used a game such as mango tainapya to teach emergent literacy and numeracy skills through role play and dramatic play. This section explains views from teachers on the use of traditional games by preschool teachers to enhance the acquisition of emergent literacy and numeracy skills through role playing and dramatic play in preschools.

##### *5.4.3.1.4.1 Mango tainapya (Mango not yet ripe)*

Play-based teaching and learning using traditional or local games was found to be a cornerstone of teaching and learning in ECE centres in Chibombo District. Participants in this study explained that “*play-based learning is a type of learning that uses play as a method of delivering lessons, with different games so that every learner can participate*” [TA1]. TG3 from school 3 also stated that “*games such as mango tainapya are very cardinal in teaching emergent literacy skills such as sounds, phonics and phonological awareness*” using role play and dramatic play. Participant TE2 and TI4 made good observations and suggestions on how such role play and dramatic play as *mango tainapya* can be used to enhance early learning in preschool learners. The participants stated that children learn to take on different roles in the mango tainapya game [TI4 and TJ4]. Communication skills are also developed as learners pay close attention to what the player is communicating so

that they win the game. In the process, social skills, cognitive skills and gross motor skills are developed. The learners also acquire literacy skills such as speaking, listening, reading and writing as they play the game [TA1 and TJ4].

Another participant from School 4 explained that *“the game is played by an unlimited number of players. A big circle is drawn in the middle of the classroom where one player stands. The player in the middle of the circle starts a song as, ‘mango, mango, mango, mango’, all the other learners respond by saying, ‘tainapya’, meaning, not yet ripe. The song continues until such as time when the other players are ready for running. At that point, the players respond that ‘yakapya’. The player in the middle of the circle runs to try and catch the learners who are outside the circle. All other players run to the circle in the middle of the classroom for safety. The one caught becomes the next player who takes the lead in singing the song”* [TI4].

The findings from the interviews showed that the *“mango tainapya game supports the acquisition of very pertinent skills such as speaking and listening”* that learners in ECE require during their academic progression [Participant TF3]. Participant TH3 equally pointed out that her learners acquired *“skills such as counting which is learnt as learners sing the song as well as when some of them are caught by the one leading the song”*. Other skills acquired from mango tainapya game were *“matching skills which learners develop when they run to the circle for safety”* [TF3].

Interviews revealed that teachers found the game of mango tainapya to teach mathematical concepts to preschool learners very helpful and enjoyable. The findings also suggest that learners found the game interesting. The results from the interviews also showed that skills such as addition, subtraction and direction were acquired. The activities in the mango tainapya revealed that learners added or subtracted their fellow learners caught in the game. The next section deals with presentation of findings from Theme 2 of this study.

#### *5.4.3.2 Theme 2- Indigenous games as a pedagogical approach for emergent literacy and numeracy skills*

Indigenous games as a pedagogical approach for emergent literacy and numeracy skills development in preschool learners was another recurrent theme that emerged

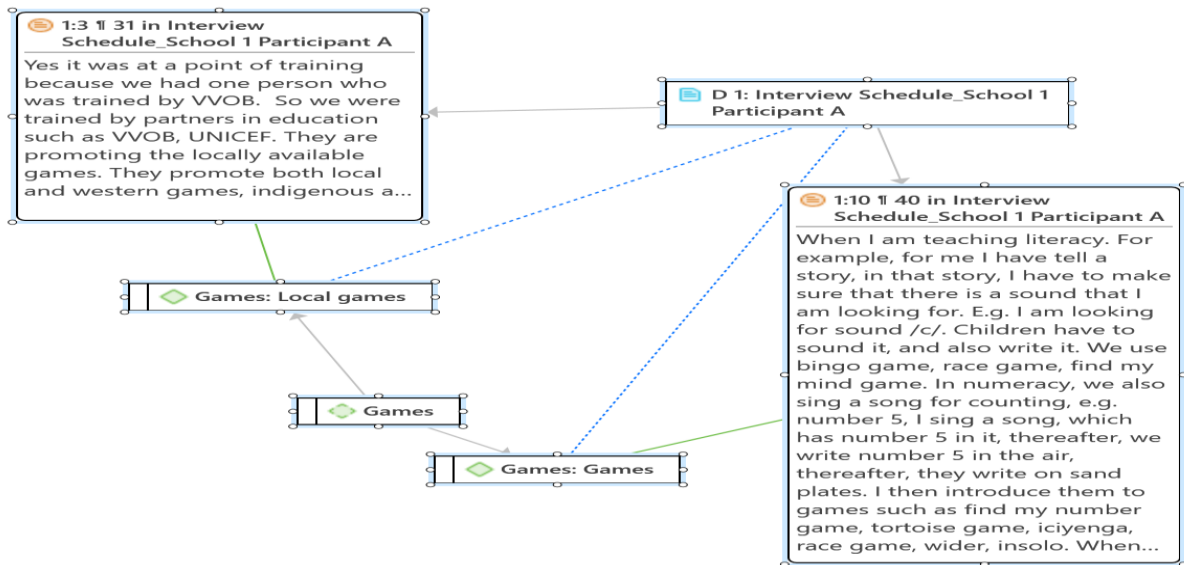
from the interviews. This theme was found to have three sub-themes, namely, teaching and learning approaches, the use of traditional games by ECE teachers and the benefits of using traditional games in teaching preschool learners. Participants shared indigenous games that are used as teaching and learning approaches in ECE and the benefits therein for both teachers and learners. The table below illustrates the issues raised by the teachers with regards to indigenous games as a pedagogical approach to emergent literacy and numeracy skills development.

#### *5.4.3.2.1 Sub-theme 1: Teaching and learning approaches.*

The first sub-theme that was identified from the interviews with teachers was teaching and learning approaches. Teachers discussed teaching approaches for emergent literacy and numeracy skills development. The approaches that teachers mentioned as being used in their lessons proved to be creative and play-based teaching approaches. This section explains the two approaches and how they enhance early learning to preschool learners in Chibombo District.

##### *5.4.3.2.1.1 Creative teaching approach*

Traditional games or indigenous games have remained key in teaching and learning in preschools. Participant TA1 indicated “*that teachers enjoy working with learners using games to teach literacy skills*” unlike using more conventional methods of teaching pedagogy in preschools. This section addresses a discourse on traditional games that are useful for promoting/enhancing the acquisition of emergent literacy skills in a creative manner in preschool learners as informed by teachers during interviews. The ad hoc network in Figure 5.6 below illustrates this aspect by showing views from the participants.



**Figure 5.6:** shows an ad hoc network of games for emergent literacy and numeracy

*Source: G.M Mwinsa*

Participant TA from School 1 indicated “that games were used by most teachers in ECE to teach emergent literacy skills. Games with accompanied songs were used by the teacher to teach sounds and counting in learners”. Participant TH3 indicated that “local games were found to be useful especially in promoting the acquisition of literacy skills such as vocabulary and speech development”. Almost all the participants stated that “games were useful in teaching emergent literacy and numeracy skills to learners”.

Participant TE2 from School 2 provided a detailed explanation of teaching approaches she uses in order to improve literacy skills development in her preschool learners. She indicated that:

*“... the fishing game is a game where learners come up with a box and you put letter cards inside the box. You then ask learners to pick a card and make a sound that is in line with the letter on the card. Each learner is given a chance to play the game no matter how many times they fail”.*

The fishing game illustrates the importance of creative teaching approach using games especially the locally known games in teaching literacy skills such as reading, sounds and sentence construction.



Another participant explained that she “uses a locally made dice to teach sounds. She labels a box with letters on each of its sides” [TG]. During the dice game, “I throw the object on the floor while children are seated in circular manner, and the letters that appear on each side must be provided with appropriate sounds by the learners who are facing the side with a letter”, explained participant TG from School 3. This game is said to provide learners with an opportunity to make appropriate sounds for each letter on the side of the dice. This was found to improve learners’ ability to use sounds accurately and appropriately.

Stories are also known to play a vital role in improving literacy levels for children in pre-primary and primary schools. Participant TH3 stated that “*literacy skills for learners in preschool are very important as all learning that takes place in schools later involves reading, writing and speaking*”. Another participant from School 1 argued that, she uses stories as key to teaching literacy skills. She indicated that:

*“... when I am teaching literacy ... I have to tell a story, and in that story, I have to make sure that there is a sound that I am looking for ... maybe I am looking for sound /c/. Children have to sound it, and also write it. [TA1]*

The teacher further stated that she ensures that all learners were paying attention to the story and took part in sounds that she planned to teach. The learners who struggle with sounds that were in a story are made to recite the story and ask them to try one more time. This is repeated until all learners learn the sounds of the lesson of the day as planned by the teacher. Repetition in this case helped learners to improve on their writing or reading skills over a period.

Another participant from School 4 elaborated on how she tries to help learners acquire literacy skills in her ECE class. An extract from the interview conducted with participant TJ4 shows that different games that can be used to teach literacy to learners. For instance, she stated that:

*... by using waida game, you can teach literacy since it involves singing as one is jumping ... we also have the colour game when you are teaching*

*literacy and the colours ... it is done by giving the child different colour game cards and asking them to match them according to colours ... then the teacher asks the learners to explain what colours are there and associate them with things at home or school. [TJ4]*

The games in the extract above show that literacy can be taught in many ways especially to young learners. According to Participant TJ4, “*the game of waida is largely associated with songs during the play. The play of waida or wider involves jumping over a rope held by two people on each end. The player is not supposed to touch the one jumping in the middle. As the player keeps jumping, the other players sing a song which improves word recognition, and sounds, vocabulary and sentence construction*”. The game is used to teach word recognition, sounds and expressive as well as receptive language skills.

Additionally, Participant TB1 insisted that “*teachers teaching literacy skills must ensure that each lesson is accompanied by two or more songs and games that are related to a particular sound one is teaching on a particular day*”. She adds that “*teachers should prepare literacy lessons with activities that have sounds of the particular game that is being used to teach a specific sound*” [TB1]. This approach assists in building skills such as oral language, letter recognition and sounds.

Another teacher added that each time she introduces a lesson, she does so with songs and games. She does this by “*making two groups of learners*” [TF3]. She adds that “*one group would be given an activity which involves pada while another can be tasked to work on something else. The group that is involved with the pada game is taken through the game by the teacher while the other group plays under the instruction of a learner who knows the game better*”. The findings of the study show that teachers used initiative and or creativity by forming groups of learners for task allocation and other games were assigned to learners who showed more competence than their peers.

#### *5.4.3.2.1.2 Play-based teaching approach*

Teachers who participated in this study made several suggestions on how best ECE teachers can improve learning outcomes of the learners they teach in preschools.

The findings from the data revealed that all teachers use learning through play as a teaching approach for mathematics and literacy. An ad hoc network in Figure 5.7 shows that most of the teachers in this study used playful teaching approaches.

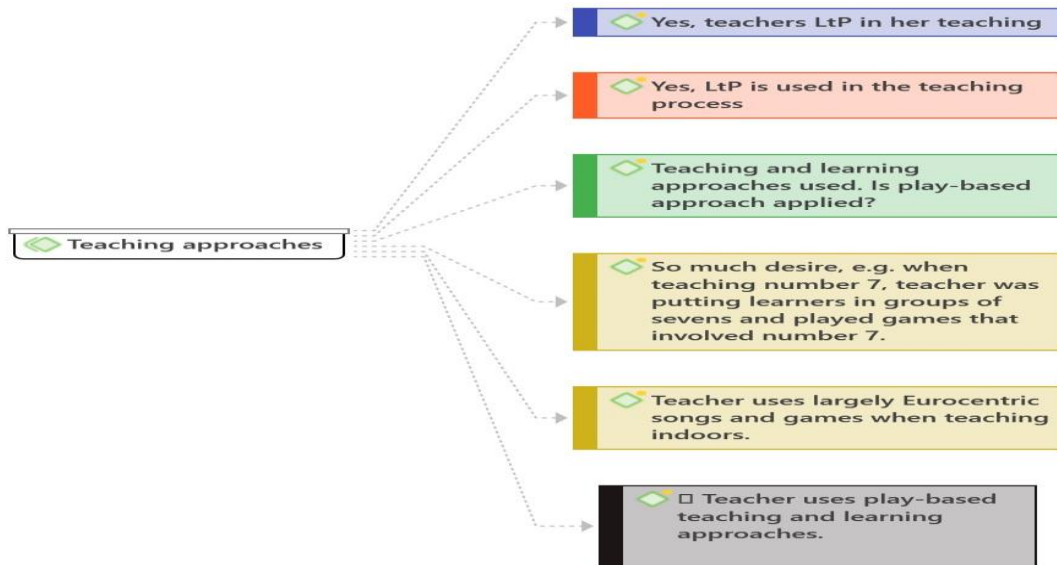


Figure 5.7: An ad hoc network on teaching approaches teachers use in ECE

Source: G.M Mwinsa

Participant TA1 from School 1 suggested that teachers “*should endeavour to incorporate play in the lessons for each day*”. She emphasised that “*play cannot be separated from teaching*”. She further added that “*what the school curriculum says on separating play from teaching is impossible in ECE. The idea that teaching should be 40% while play should be 60% is an impossible thing to do. You cannot manage to separate play from teaching ECE learners*”. “*I think ECE teachers should just use playful teaching methods from beginning to the end. Unfortunately, in our school, this is not happening*”.

Another participant [TB1] also argued that “*preschool teachers should endeavour to become knowledgeable on the use of traditional games and apply them correctly in a particular lesson and to an appropriate age-group of learners*”. She further emphasised on the need for teachers to “*produce or make the materials for use in specific games themselves*”. Her argument was that, “*making materials for games for oneself will help teachers to be more competent and more familiar with the ways of playing particular games*”. In our school not all teachers are able to use traditional

games, but others still try to use western games which learners are not familiar with. The local games could also be said to help teachers to look at the learning outcomes of each game beforehand leading to the best outcomes in the performance of learners in a classroom.

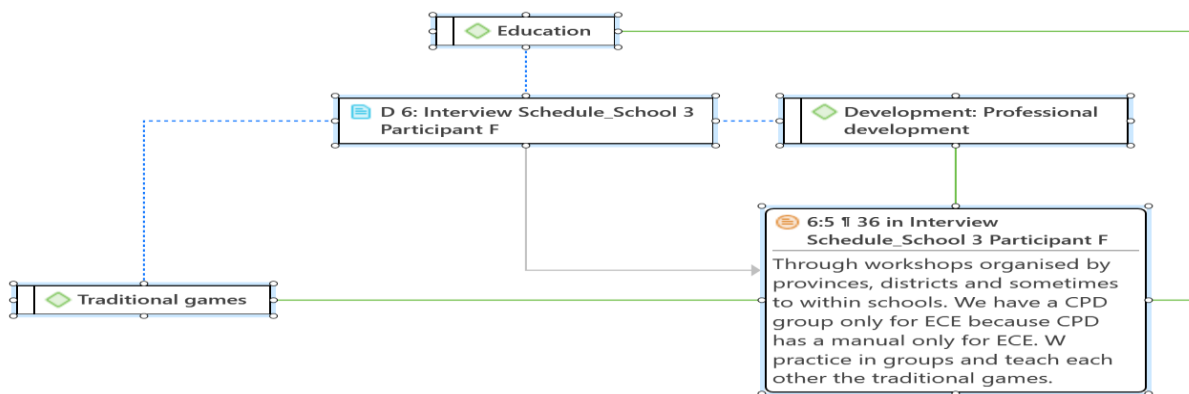
Other participants emphasised the importance of creativity, innovation and resourcefulness of ECE teachers in their lesson planning and delivery approaches. The participants stressed the need for teachers to make materials from locally available materials such as bottle tops, sand, clay soil, stones, sticks, wood and wires among others. TC1 from School 1, for instance, emphasised the need for teachers to *“be active and also to be creative ... make a lot of materials using the local environment not to depend on the school that it should buy this and that for them”*. Her view was that, *“teachers were supposed to create materials that are manageable within the environment they live in before bringing in any materials that are purchased from shops”*.

Participant TA1 from School 1 discouraged teachers from using Eurocentric materials that are bought from shops as the main teaching resources as she indicated that such western games were unfamiliar to the learners. Participant TD2 from School 2 said *“materials that teachers should make from locally available resources should, however, be made attractive and beautiful in order for learners to be motivated and captivated when using them”*.

Further, Participant TE2 suggests that *“teachers should find ways of working with parents. When parents are involved in the learning of their children, the tasks teachers give in schools will continue while the learners are at home*. She added that *“there are a lot of games that teachers can learn from parents. This is because parents are the first teachers the child encounters”* before entering the formal school system. Unfortunately, *“most parents are not involved in the education of their learners as they are always busy with their work”* added the participant. The findings of this study showed that there is a lack of parental involvement.

Participants at one of the schools suggested that teachers should involve themselves in CPDs. Participant TH3 from School 3 indicated that *“CPDs will help*

teachers to learn from each other and share ideas on how best to deal with gaps that one might have regarding teaching approaches. CPDs would help come up with better teaching strategies that would include the use of traditional games in teaching and learning of the learners in preschools”. Participant TF3 from the same school emphasised that “through CPDs, teachers should meet to have discussions for them to upskill each other in teaching methods. Unfortunately, teachers do not involve themselves in CPDs.” According to findings from the interviews, teachers agreed that they do not involve themselves in CPDs programme. The ad hoc network below shows an extract from Participant TF3 from School 3.



**Figure 5.8: Ad hoc network showing use of CPDs to upskill one another**

*Source: G.M Mwinsa*

The study found that CPDs have been found to be extremely useful when used by teachers of similar subject areas. The CPDs were said to support each teacher to improve in an area that they are lacking as well as ideas that work better. CPDs were also found to bring about best practices in schools as teachers pay attention to learning outcomes that are desirable for a lesson.

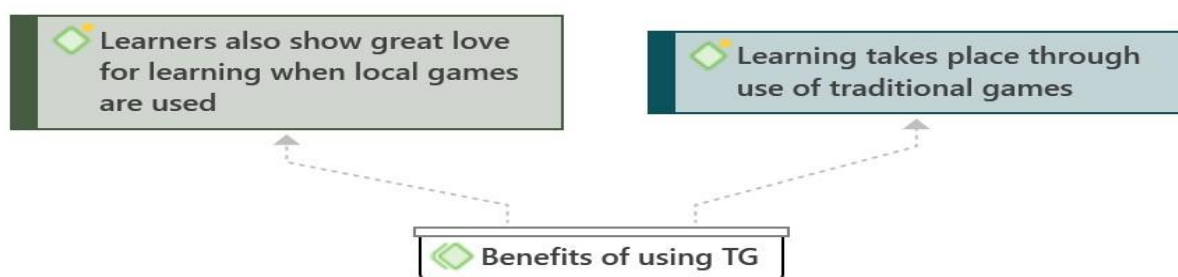
Participants from School 4 [TI4 and TJ4] suggested that “ECE teachers should endeavour to begin each lesson with songs and games”. According to Participant TI, “if a teacher is teaching the sound of letter /s/ on a particular day or week, she or he should start with a story or song that has /s/ in it. Later in the lesson, that is when he or she can tell the learners the lesson of the day. This is helpful as learners in all levels of preschool enjoy stories and songs”. ECE teachers stated that “teachers

who start lessons with songs and or stories usually find teaching preschool learners very interesting and enjoyable” [TA1, TB1, TI4 and TJ4].

TJ4 from school 4 indicated that her learners usually remind her if she is delaying starting a song on a particular day. She emphasises that “*there can be no meaningful learning if an ECE teacher ignores the fact that learners in preschools learn through play*”. Participant TI from the same school added that “*Start the day with either a song or story that leads to the sound that one desires to teach on a particular day*”. The findings of the study revealed that ECE learners cannot learn without using *play-based approach*. Learning through play therefore took a centre stage in approaches suggested by teachers and a great emphasis on using local games was also learnt from the participants. The next section delves into the benefits of using traditional games in teaching preschool learners.

#### 5.4.3.2.2 Sub-theme 3: Benefits of using traditional games in teaching preschool learners

The third sub-theme that emerged during interviews was the benefits of using traditional games in teaching preschool learners. Teachers shared their views on benefits that are embedded in using indigenous games for enhancing the acquisition of emergent literacy and numeracy skills. Figure 5.9 below shows participants’ views on the use of traditional games.



**Figure 5.9: Ad hoc network on benefits of using traditional games**

*Source: G.M Mwinsa*

The participants’ views on the benefits accrued when traditional games are used in teaching preschool learners are discussed in detail below. Participants raised two

key issues, namely; benefits for emergent literacy and numeracy skills. I discuss each of these issues raised below.

#### *5.4.3.2.2.1 Benefits for emergent literacy*

Traditional games remain significant in teaching and learning of emergent literacy to pre-primary school learners. Some of the benefits accrued due to the use of traditional games are undisputed. Participant TA1 stated that “*traditional games help in stimulating children’s critical thinking*”. She added that “*children also learn social rules and ethics that are used in the community such as respect for elders, protecting each other and helping the needy*”. Participant TD2 equally suggested that “*local games give learners a chance to have fun and be active all the time*” during both indoor and outdoor classes.

Other participants from School 3 had a lot of ideas on the benefits that can be accrued from using indigenous games in teaching emergent literacy. Participant TF3 from school 3 argued that “*local games enhance the cultural values, life skills, self-confidence and discipline of the learners*” in preschools. She also further suggested that “*these games improve children’s ability to appreciate their cultural heritage*”.

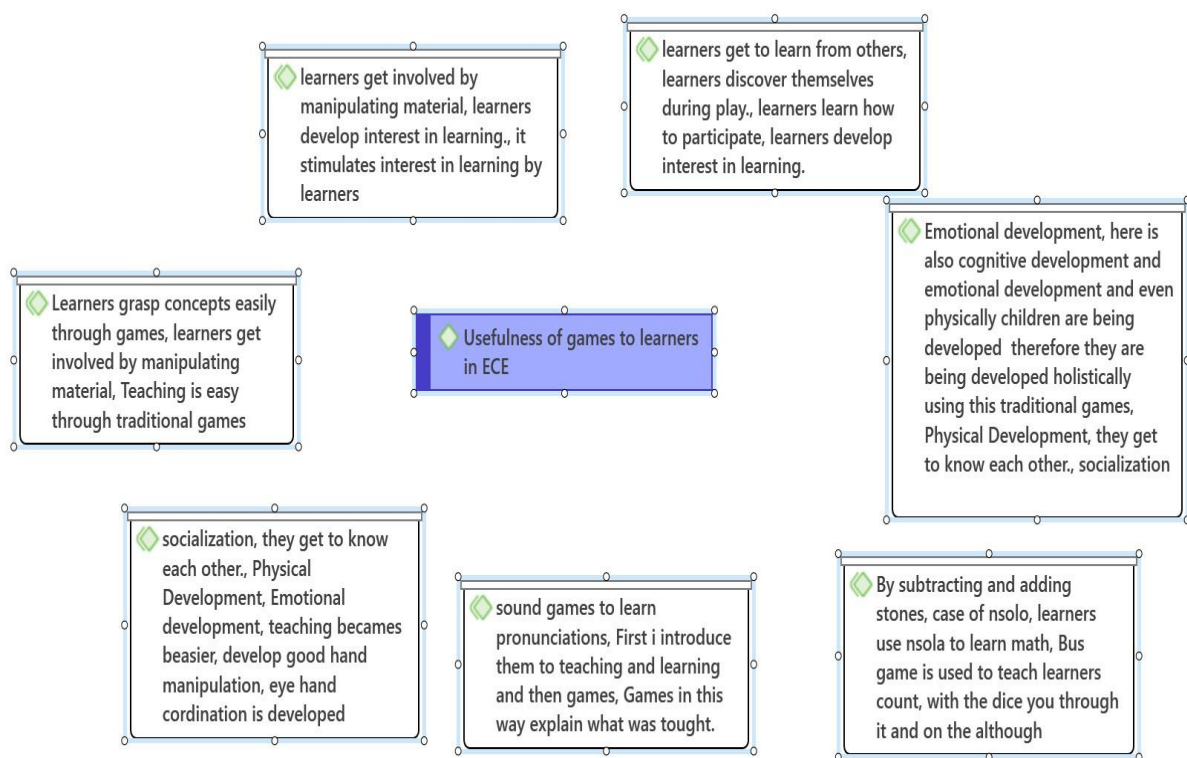
The indigenous games were also suggested to have benefits that relate to academic exercises. For instance, Participant TG3 also argued that “*children also improve in vocabulary, singing, reading, rhymes, expressive and receptive language*”. Overall, participants argued that traditional games are very vital as they are known to help learners improve children’s developmental milestones that support the acquisition of literacy skills such as expressive and receptive language.

The findings in the interviews revealed that indigenous games are very cardinal in children’s acquisition of emergent literacy skills. The acquisition of cultural norms and values was said to be pertinent in teaching using indigenous games. Traditional games also were found to support the development of skills such as socialisation and motivation. They also help in improving speaking skills pronunciation or fluency.

#### *5.4.3.2.2.2 Benefits of numeracy skills*

Indigenous games or traditional games are very vital in teaching and learning of numeracy skills in preschool learners. A participant at School 4 informed the study that “*traditional games can benefit the learners as children are helped to explore fundamental number concepts such as counting, sequencing, number combinations, place values and patterns*” [T14]. Another participant from the same school also indicated that games also “*increases overall motivation to work with numbers and solve puzzles in life, including promoting of cooperation in life*” [TJ4].

Another participant from School 2 also indicated that “*traditional games help in improving creativity and innovativeness in children as they work with numbers*” [TD2]. Other participants such as TF3 also argued that “*games also help learners to promote teamwork as children work in groups*”. The participation in local games by children in preschools was also said “*to promote ownership in children as they learn to interact and cooperate*” [TF3]. The ad hoc network in Figure 5.10 shows that learners have a lot of benefits when traditional games are used by teachers during the lessons in mathematics or indeed any other subject area.



**Figure 5.10: An ad hoc network on the usefulness of games to learners in ECE**

*Source: G.M Mwinsa*



Participants from all schools indicated that traditional games are very vital in teaching of numeracy skills to preschool learners. Participant TH4 suggested that traditional games support “*the development of motor skills and positive attitudes towards learning of numbers*” or mathematical skills. Almost all participants indicated that using indigenous games encourages children to work with concrete objects since these add to their permanent understanding of both literacy and numeracy skills [TA1, TE2, TF3 and TJ4].

The findings in the interviews revealed that indigenous games are very cardinal in children’s ability to master numeracy skills. Participants also stated that games helped learners to be emotionally stable. The games also supported learners in developing their cognitive, social and physical skills. The participants indicated that learners learn to cooperate and interact with one another during games that are mathematical in nature. The indigenous games were also found to support the development of numeracy skills that they can use currently and in other life skills. The next section deals with the challenges teachers face when using indigenous games in teaching.

#### *5.4.3.3 Theme 3 – Challenges teachers face when using indigenous games in teaching.*

A third theme that emerged from the interviews was about the challenges teachers faced when using indigenous games in teaching. This theme addresses limitations and inadequacies that preschool teachers grapple with as they are teaching learners using traditional games. From this theme, five subthemes emerged, namely, classroom and outdoor challenges, age of learners, pedagogical challenges, a lack of knowledge and skills and a lack of creativity, innovation and resources. Teachers shared information on how they deal with all the challenges stated when teaching emergent literacy and numeracy skills. I begin with the first sub-theme that was identified from among the challenges faced when using indigenous games in teaching ECE learners.

##### *5.4.3.3.1 Sub-theme 1: Classroom and outdoor challenges*

The first sub-theme in Theme 3 of this study was found to be classroom and outdoor challenges. Participants in this study expressed concerns over several challenges that they face in ensuring that learning takes place in preschool learners. Teachers in this study lamented the inadequate classroom and outdoor learning spaces as the major challenge or limitation to good early childhood practice. All participants except one indicated that they found classroom over crowdedness as the most limiting factor in promoting appropriate ECE practices, especially when required to use games to teach a specific skill.

Participant TG3 from School 3 indicated that “*large class sizes were a serious threat to teaching and learning in most preschools countrywide*”. She argued that “*there is no single teacher who can manage to handle over 70 learners in one classroom especially when different types of games need to be played*”. She added that:

*“... the major challenge is over enrolment because no matter how much you teach, only a few will take part and as a teacher sometimes you just concentrate on the small number and others are attended to later but when the lesson ends, others do not do anything at all. I feel very sad when I am unable to meet the needs of all my learners due to over enrolment ... during outdoor games ... learners start doing other things instead of concentrating on the game you want them to play ... learners get distracted, and maybe it is due to their huge numbers”.*

The findings in the study show that all participants expressed concern over inadequate learning spaces due to over enrolment. Some participants brought out sentiments that included failure by learners to participate in the games fully due to class sizes. Some learners were said to be ever distracted as the teacher could not manage to see all the different things learners were doing at once. The next section discusses the age of learners as a challenge in teaching ECE learners.

#### *5.4.3.3.2 Sub-theme 2: Age of learners*

The age of learners emerged as the second sub-theme of Theme 3 of this study. It was discovered in the interviews that “*the age of learners considerably affects the type of teaching methods that teachers choose to use during their teaching*” [Extract

from participants]. Teachers from School 3 who participated in this study had candid views on how the teaching methods used affected the teaching and learning in ECE centres. A teacher at one of the schools indicated that “*the games that she plans are age-appropriate*” [TG3].

However, it is vital to state that not all schools have age-appropriate teaching methods being used. Results from schools showed that the age of the learners mattered when selecting the type of game to use during lesson delivery. A node from the analysis below depicts teacher views on what determines the choice of teaching methods one uses.



**Figure 5.11: A node depicting teachers' views on choice of teaching methods**

*Source: G.M Mwinsa*

The responses show that there is a general view from the teachers that teacher experiences, academic qualifications, age of learners and enrolment levels affect the methods one chooses to use especially when applying learning through play. However, of emphasis was the age of learners that was a serious challenge to effective teaching and learning in schools.

School 3 for instance reported having difficulties selecting an appropriate teaching method to use at reception level due to the age of some learners. The school was found with a few learners aged eight and nine in the reception class. This age of learners made it difficult for teachers to decide on activities that could be used in the lesson as the older learners found some activities boring while the young learners enjoyed the same games. Participant TG3 indicated that “*the age affects the teaching methods I use ... for assessment, I do it according to the level, others are able to write, trace, colour, and to draw*”. Participant TG3 further explained that “*having multiple tasks in the same class gives teachers too much work that exhausts*

*them. It is therefore easier to teach learners of the same age and learning level than those with multiple ages and levels*". Therefore, this requires teachers to be creative and innovative when working with children in preschools. The findings also revealed that the age of the learners remained vital for the choice of teaching methods that the teachers selected in their lessons.

#### 5.4.3.3.3 Sub-theme 3: Enrolment

Sub-theme 3 of the third theme was enrolment in preschools taught by participants of this study. Enrolment emerged as a key factor in the pedagogical approaches that teachers decide to use during their lessons in ECE classrooms including primary and secondary school grades. The decisions that teachers are faced with especially with regards to teaching methods that one can employ in his or her teaching programme are *"largely dependent on a number of learners in the classroom, learners' abilities, availability of teaching and learning resources and a teacher's creativity and innovativeness"* indicated Participant TG3 from School 3.

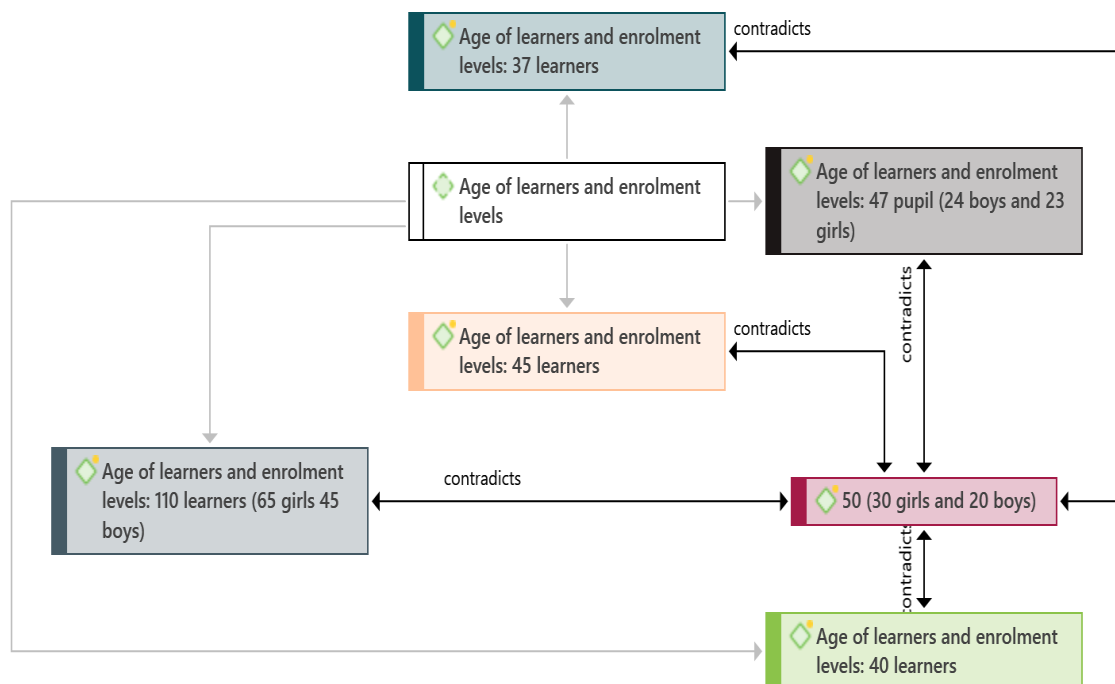
The schools that participated in this study were found to have large class sizes with only one teacher to handle the learners. At one of the schools in this study, a teacher had over 70 learners in her class. According to the participant, teaching large class sizes is a challenge, especially since she handles the class alone and has another class after the same day. She posited that *"enrolment affects the use of games because during the games, others do not participate ... when you are attending to the other group, you find that others are fighting [TG3]*.

Teachers indicated that enrolment in the classes they taught affected the teaching methods that they chose to use on a daily basis [*Extracted from interviews*]. In most cases, teachers were limited to teaching approaches that allowed them to manage big class sizes such as circle teaching approach more learner exploratory approaches. Participant TA1 from School 1 lamented the difficulties she goes through in her teaching due to the high number of learners in the class. She indicated that:

*"... if I have 40 learners, I have to make teaching and learning aids that can accommodate everyone and since I am the only teacher and I do not have*

any assistant teacher to help me. It's very difficult because when they are playing, we need another teacher to observe them... as a teacher you move from this group to the other as they are playing games. So sometimes you are made to prepare games, yes, I prepare games adequately yes and we are supposed to have enough games for every learner". [TA1]

The ad hoc network in Figure 5.12 below illustrates the class sizes in support of sentiments from participant TA1.



**Figure 5.12: An ad hoc network of the age of learners and enrolment**

*Source: G.M Mwinsa*

At another school, a teacher indicated that she does not achieve her intended goals or planned learning outcomes due to the big class size that she handles. She postulated that "... maintaining order is also a problem ... the outcomes are not achieved by the end of the day due to over enrolment" [TF3]. Participant TF3 from School 3 indicated "that managing over 100 learners is an enormous task that no teacher can single-handedly manage. She lamented that even if a class were to have two teachers, planning and monitoring activities for over 100 learners is not feasible". The participant emphasised that teachers should only have a maximum of 30 learners in a class for them to be effective at their work.

It is clear from the findings of this study that teachers in schools had serious challenges when it comes to early childhood practice due to enrolment figures. Creativity and innovation of a teacher coupled with enrolment takes centre stage on what a teacher decides to use as a pedagogical approach to a specific lesson. In this study, participants had a wide range of enrolment numbers across schools and classrooms. Some classrooms had learners in excess of 40 while others had over 100 learners. This posed enormous challenges to the teacher's ability to practise play-based teaching and learning approaches in ECE classrooms. The next section deals with sub-theme 4 of this theme.

#### *5.4.3.3.4 Sub-theme 4: Pedagogical challenges*

The fourth sub-theme that emerged from the third theme of this study was pedagogical challenges. Pedagogy was found to be one of the major challenges teachers raised during the interviews. Participant TE2 stated that, "*I have some challenges when teaching preschool learners especially when selecting some traditional games*". She argued that some games were too complex and she found some games difficult to use when teaching. However, when asked which traditional games she found hard to use in her teaching, she could not state clearly.

Some teachers found it difficult to develop materials that were age-appropriate for specific lessons/topics. Participant TF3 from School 3 stated that "*selecting a teaching approach is a challenge because of the age of learners and non-availability of resources*". The teachers had challenges "*to prepare lessons that were appropriate for the age of the children they were teaching*", stated participant TB1 from School 1. This led to failure to achieve the planned and intended learning outcomes for specific lessons by some teachers.

The findings from interviews suggested that teachers had difficulties with teaching learners due to a lack of knowledge and skills on use of specific traditional games for lessons. The reasons for the lack of knowledge and skills on use of traditional games was found to be a lack of training in playful pedagogy during their teacher training. The pedagogical challenges were also compounded by inadequate CPD workshops.

#### 5.4.3.3.5 Sub-theme 5: Lack of knowledge and skills

The fifth sub-theme deals with the lack of knowledge and skills for ECE teachers in the research site. A limitation that was found in the research site was the lack of familiarity with the local games of Chibombo District by some teachers. In an interview with one participant, TB1 indicated that, *“I was having challenges with teaching through games as most games I know are not local”*. She stated that the traditional games she knew were from another part of the country where the rules of the games were slightly different. This made it somewhat difficult for her to adapt to new local games as she was not yet able to adapt to the new working environment [TB1].

In another interview, a participant from School 3 lamented that *“teaching ECE learners through playful pedagogy is not easy and requires adequate knowledge and skills on the part of the teacher”* [TH3]. She indicated that she had found that teachers with weak training background in ECE struggle to teach. The reason for the failure is a lack of knowledge and skills on ECE practices. The findings in this study also showed that a lack of knowledge on ECE practices was affecting teaching and learning in schools especially when teachers use traditional games.

#### 5.4.3.3.6 Sub-theme 6: Lack of creativity, innovation, and resources

The sixth sub-theme of Theme 3 was found to be the lack of creativity, innovation, and resources in ECE teachers and schools. Teachers shared their views on why it is vital for one to be creative, innovative, and resourceful. Participant TJ4 indicated that *“this leads to having adequate materials that are necessary for teaching and learning in preschools”*. However, production of teaching and learning materials was another challenge that teachers in this study were facing in executing the duties of teaching and learning for preschool learners. Participant TH4 at school 4 expressed concern that she was facing *“difficulties with putting locally available materials together for purposes of teaching and learning of emergent literacy and numeracy skills”* in preschool learners. Participant TB1 argued that:

*“... of course, we can use the locally available materials, but sometimes there are certain things that you have to use for them to come out the way you want*

*them to be. For example, glue, maybe paper to make them colourful, paints and markers which require finances for me to buy them”.*

This shows that even if teachers are encouraged to use locally available materials for teaching and learning materials, they still need a few things that should be bought using funds that some schools might not have especially rural schools such as the ones in this study in Chibombo District.

Participant TB1 further indicated that the *“teaching and learning materials produced from bottle tops, empty boxes, stones, sticks and paper need to look attractive to the learners in order to stimulate the children”*. Attractive learning materials also improve learner attention as children love colourful things (Parker et al., 2022). Participant TE2 also stated that *“sometimes the challenge she faces is how to make materials that are attractive in the absence of paint and markers”*. The lack of finances to support the purchasing of materials that can improve the attractiveness of local materials remains a limitation in early childhood practice.

The interviews with teachers in this study revealed to a great extent that not all teachers trained in ECE could innovate and develop materials that are age-appropriate and learner-appropriate for each level of ECE taught. Some of the concerns raised by teachers were limiting their ability to deliver appropriate lessons to ECE learners bordering on the need for each teacher to be innovative and resourceful. Teachers in this study further indicated that they knew certain traditional games but had no idea that they could be used to teach literacy and mathematics in their ECE. The next section covers the fourth theme that emerged from the interviews.

#### *5.4.3.4 Theme 4 – Intervention measures teachers use to deal with challenges faced*

Another theme that emerged from the interviews, was to do with intervention measures teachers use to deal with challenges. This theme discusses aspects that deal with ways of improving teaching skills in emergent literacy and numeracy. It also looks at how traditional games can be included in lessons for teachers who teach preschool learners. From this theme, one subtheme emerged, namely the strategies to improve the teaching of emergent literacy and numeracy. The intervention



measures that teachers put in place in order to deal with challenges or limitations faced are discussed below.

#### *5.4.3.4.1 Sub-theme 1: Strategies to improve teaching of emergent literacy and numeracy*

Theme 4 that emerged from the findings of this study was found to have only one sub-theme that discusses strategies to improve teaching of emergent literacy and numeracy skills. Teachers shared their views on how best ECE practitioners can be assisted to improve their skills in lesson delivery when using traditional games. The views raised included class size and enrolment, and creativity, innovation and resourcefulness. The findings of this study have shown that teachers find means and ways of coping with some challenges that they are faced with in class and in their overall working career as ECE teachers.

##### *5.4.3.4.1.1 Class size and enrolment*

Class size of learners taught in any school has a significant influence on the strategies one uses to teach ECE learners for better learning outcomes. Participant TJ4 stated that she manages to deal with large class sizes by dividing learners into groups. She added that *“one half of the learners practice writing, or tracing or drawing on the first day of the week while the other half builds blocks and participates in other activities that do not involve use of pencil or colouring materials”*. This way, she can give feedback to all learners who take part in writing or scribbling, drawing or painting on a day that such a learner does these tasks. With time, all learners acquire some skills in holding a pencil, scribbling, colouring, shading and completing dotted lines. This leads learners to manage to write and read before they graduate to Grade One.

With regard to small classroom spaces due to over-enrolment, teachers indicated that they find it useful to take children outside for games that require large spaces. Teachers who use outdoor learning spaces rarely find difficulties with classroom sizes as they use traditional games in the play grounds that are usually adequate in rural schools. Participant TB from School 1 shared her view on what she does in activities that require large learning or practising spaces. She stated that:

*“... I simply take my learners outside to play kambeba game, kambushi kalila lila mee and cidunu or cidunune as these games need a lot of space. I also use the playground when I have games that need a lot of sand and space”.*

Almost all teachers in this study suggested that they made similar decisions as the ones made by participant TB when it came to dealing with over-enrolment and the need for large spaces for certain games. All interviews revealed that each teacher tried to find a way of managing with over enrolment and class sizes. In schools where even outdoor learning spaces were inadequate, teachers improvised by creating room or enough space for certain games such as *pada* and *chiyenga* or *chiyato* within the classroom. This led to significant improvements in learner performance due to intervention measures put in place by a teacher.

#### *5.4.3.4.1.2 Creative, innovation and resourcefulness*

Teachers also indicated that it was very vital for each one of them to remain creative and resourceful if they were to survive as ECE teachers. This called for each teacher to be able to see areas of improvement that he or she could use in improving performance of learners. Participant TH3 stated that she ensures that *“learners learn something by the end of the day”*. She also innovates by putting the learners in *“groups of five children when doing games like chiyenga and chiyato”*. She added that during *“group work, I move around to make sure everything is fine”* [TH3]. *“Putting children in groups and assigning them different tasks assists me to maintain order a bit since the class sizes are huge”* stated another participant [TB1].

Other participants at School 2 stated that there are times when the school administrators buy them materials to produce teaching aids [TD2 and TE2]. However, at some schools, the experience was completely different. Teachers at Schools 1, 3 and 4 indicated that they *“usually improvise by using some personal resources to buy small things like pencils and colourants for learners and production of teaching and learning materials”*. The items teachers bought or improvised were used when making charts, sounds and letter cards including creating shapes that are used for teaching numeracy skills.

Teachers suggested that all ECE teachers needed to be creative, and resourceful when handling preschool learners. Teachers argued that it was very vital for all teachers to learn from each other by participating in CPDs organised by schools or zones. The findings also revealed that teachers of ECE needed to find ways of working together with fellow teachers. Working together was mentioned as a means to help teachers who had little knowledge on early childhood practices. The emphasis from the findings was the need to ensure that all teachers acquire skills that involve learning through play. In the next section, I present findings from focus group discussions.

#### 5.4.4 Data from focus group discussions

Focus group discussions were conducted after individual interviews had been concluded with all the ten participants in this study. The study had two sessions of focus group discussions as earlier stated in Section 4.6.3 of this thesis. The participants for each session were five bringing a total of ten participants in the two sessions. The themes and sub-themes that emerged from both sessions of the focus group discussion are presented in the Table 5.7 below.

**Table 5.7: Themes and sub-themes that emerged from focus group discussions**

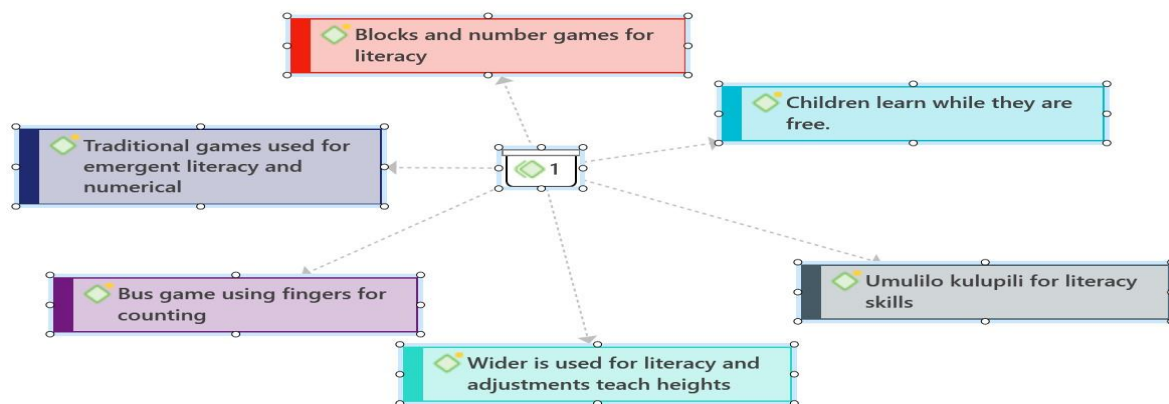
Themes	Sub-themes
Indigenous games used in teaching literacy and numeracy	Traditional games used to teach emergent literacy Traditional games used to teach numeracy skills
Indigenous games as a pedagogical approach for emergent literacy and numeracy skills	Teaching emergent literacy using traditional games and expected learning outcomes Teaching numeracy using traditional games and expected learning outcomes
Challenges teachers face when using indigenous games in teaching	Challenges faced when teaching emergent literacy Challenges faced when teaching numeracy
Intervention measures teachers use to deal with challenges faced	Intervention measures teachers use to deal with challenges faced

*Source: G.M Mwinsa*

##### 5.4.4.1 Theme 1: Indigenous games used in teaching literacy and numeracy

A recurring theme that emerged from the focus group discussions as shown in table 5.7 above was indigenous games used in teaching literacy and numeracy. This theme discusses aspects that deal with traditional games that can be used to teach emergent literacy and numeracy skills. Below is an ad hoc network in Figure 5.13

showing traditional games preschool teachers' use in teaching literacy and numeracy skills such as reading, writing, speaking, counting, numbers and measurements.



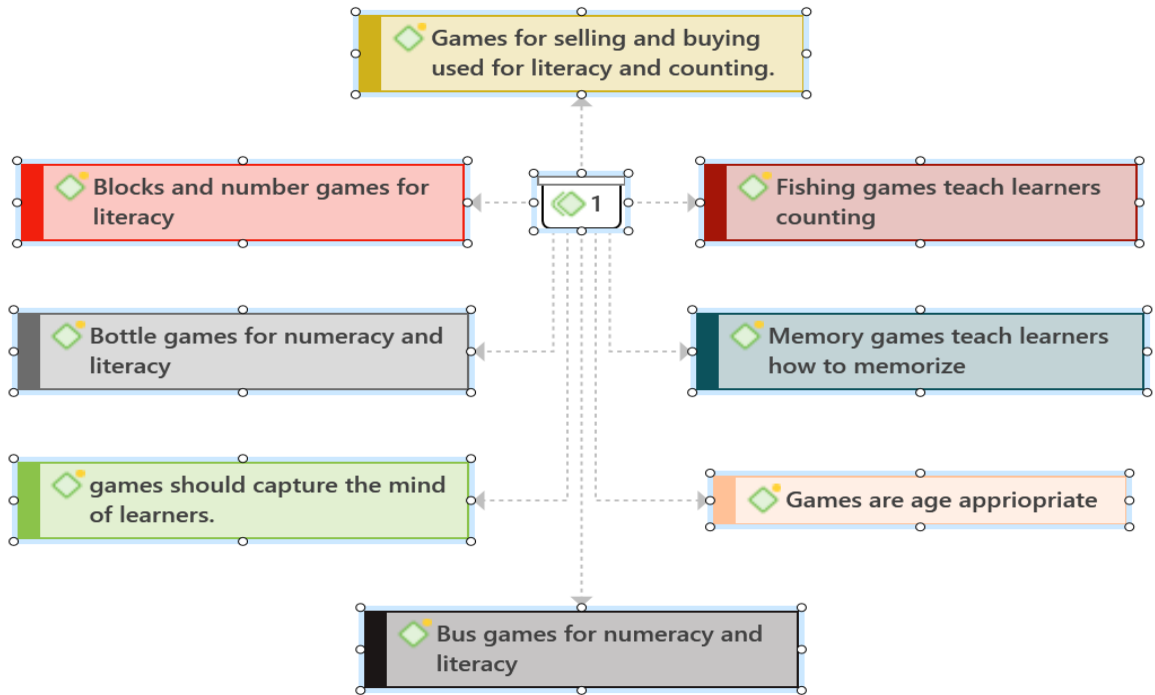
**Figure 5.13: An ad hoc network of traditional games used to teach literacy and numeracy**

*Source: G.M Mwinsa*

The ad hoc network in Figure 5.13 presents traditional games that teachers identified as being useful for teaching literacy and numeracy skills. The stated games are related to Theme 1 in this section. From this theme, two subthemes emerged, namely, traditional games used to teach emergent literacy and traditional games used to teach numeracy skills. I discuss each of the sub-themes below.

#### 5.4.4.1.1 Sub-theme 1: Traditional games used to teach emergent literacy

The first sub-theme in Theme 1 from focus group discussions was traditional games used to teach emergent literacy. Participants in FGD1 stated that “*a literate child can handle a lot of tasks due to his or her ability to read and write*”. In this study, teachers were able to identify traditional games that they use to teach emergent literacy in ECE classes. FGDs present the identified traditional games participants mentioned as being used in their teaching process. The identified traditional games were shown in the ad hoc network in Figure 5.14 below:



**Figure 5.14: Ad hoc network of traditional games that are useful for emergent literacy skills**

*Source: G.M Mwinsa*

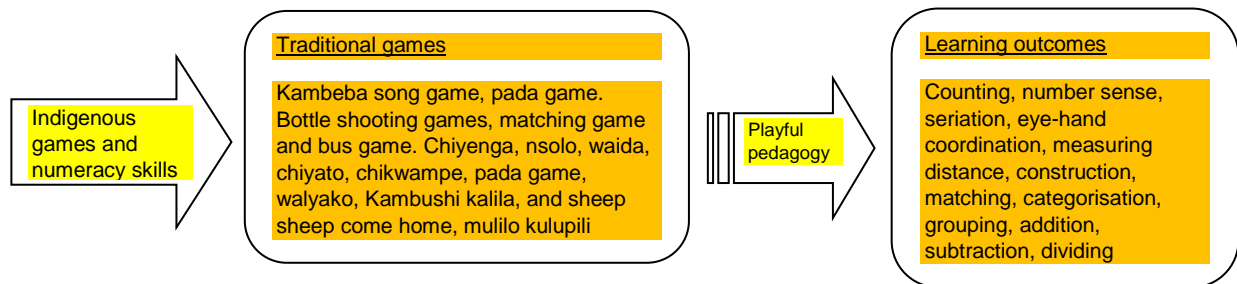
The stated games are said to have been used by both adults and children in societal activities for various reasons indicated by participants in FGD1. Participants in the second session of focus group discussions indicated that “*for some community members, the games had been used for mere socialisation while others use them to teach specific skills for emergent literacy and numeracy skills*” [FGD2]. FGD2 further added that “*some teachers in preschools have used traditional games as a tool to enhance acquisition of skills such as expressive and receptive language*”.

The findings of this study showed that teachers in preschools use traditional games to promote the acquisition of emergent literacy skills. Games that were particularly vital as stated by participants were bus game, fishing game, memory game and bottle game among others. The next section deals with traditional games teachers use to teach numeracy skills.

#### 5.4.4.1.2 Sub-theme 2: Traditional games used to teach numeracy skills

The second sub-theme in this theme deals with traditional games used to teach numeracy skills. Teachers shared their views on the different local or traditional

games that are used to teach mathematical concepts. Participants in FGDs stated that “*there are several indigenous/traditional games that teachers can use to teach numeracy skills to ECE learners*”. When participants were asked to identify indigenous games that they use in class to teach numeracy skills, the identified games were as shown in figure 5.15 below.



**Figure 5.15: Indigenous games used for numeracy skills**

*Source: G.M Mwinsa*

The stated traditional games are local games that are typical in every Zambian community. The traditional games mentioned were the same or like those stated in interviews that they reported to involve mathematical concepts.

#### *5.4.4.2 Theme 2: Indigenous games as a pedagogical approach for emergent literacy and numeracy skills*

A second recurring theme that emerged from the focus group discussions was indigenous games as a pedagogical approach for emergent literacy and numeracy skills. The theme discusses aspects that deal with teaching emergent literacy and numeracy skills. From this theme, two subthemes emerged, namely, teaching emergent literacy using traditional games and expected learning outcomes, and teaching numeracy using traditional games and expected learning outcomes. I discuss each of the sub-themes below.

##### *5.4.4.2.1 Sub-theme 1: Teaching emergent literacy using traditional games and expected learning outcomes*

The first sub-theme that emerged from Theme 2 of the focus group discussions was teaching emergent literacy using traditional games and expected learning outcomes. According to participants [FGDs], “*teachers in early childhood education find*

themselves working on best practices to ensure that the learners they teach acquire emergent literacy skills before they graduate to grade one". The teaching methods they use play a pivotal role in achieving this milestone.

The stated games in the focus group discussions were said to have the ability to assist learners acquire skills such as reading, writing, phonics and phonological awareness. Table 5.8 exemplifies the teaching methods teachers use by ensuring that traditional games used play the intended role of having literate children.

**Table 5.8: Application of indigenous games in ECE practices - emergent literacy**

Indigenous/traditional games used to enhance acquisition emergent literacy skills		
Indigenous/traditional games and songs	How to play the game	Emergent literacy skills acquired
<i>Kambeba</i>	<i>The learners stand in a circle and in the middle of the circle you put and cover the sounds with papers, then you sing the song, where the song finishes from 'Ako ako ka mbeba' should find the sound you are looking at on that particular day.</i>	<i>sounds of letters of the alphabet stating the sounds correctly matching sounds with words listening and speaking</i>
<i>Pada</i>	<i>Draw a box on the ground and divide it into smaller 8 boxes, write a sound in each box, a learner throws a flat stone in the box, where the stone falls, the learner should say that specific sound.</i>	<i>Learner learns to identify sounds of letters of the alphabet. Associate letter sounds to items in class or home.</i>
<i>Shooting game</i>	<i>Put names of the sounds on the bottles for example you taught sound /S/ and then the learner shoots at a different sound, loses the game, but the one who shoots sound /S/ wins the game. Or put syllables on the bottles and then put the bottles in the line and ask the learner to throw the stone and whichever bottle falls, the learner should say the syllable on it.</i>	<i>Learner learns to identify sounds of letters of the alphabet. Associate letter sounds to items in class or home. Stating the sounds correctly Matching sounds with words</i>
<i>Fish game</i>	<i>Find a box and put different sound cards inside the box and find a string the learner should use to fish out sound cards ... learner should say the sound they fish out.</i>	<i>sounds of letters of the alphabet stating the sounds correctly matching sounds with words listening and speaking</i>
<i>Bus game</i>	<i>Bus game is similar to fishing game but with it you need two learners, one stands on one end while the other on the opposite end. So, I will show them the sounds of the day and provide a bus with six seats and whoever fills the seats fast with the sounds of the day win the game.</i>	<i>sounds of letters of the alphabet stating the sounds correctly matching sounds with words listening and speaking</i>
<i>Kambushi kalila lila</i>	<i>Make a circle with the learners and one learner goes round the circle while singing the song and holding a soft object in the hand ... the learner runs around and at some point drops the object behind another learner ... the one whose back the object has been dropped on should pick the object and chase after the opponent. If the opponent reaches the position early, she/he wins.</i>	<i>listening and speaking</i>
<i>Sheep sheep come home</i>	<i>Sheep sheep come home, where you make two groups of learners standing facing each other. The first group says, sheep sheep come home, the other will respond, we are afraid, the first group will ask, and what are you</i>	<i>listening and speaking</i>

	<i>afraid of? Second group says we are afraid of the lion, then the first group says, the lion is dead, you can come home. But as they start coming, they make sure they start catching those in the first group.</i>	
<i>Umulilo ku lupili</i>	<i>make a circle and make the learners stand in the circle and those in the circle will start singing umulilo kulupili washima then all the learners who were in the circle should stand behind those standing in the middle of the box and the learner who does not manage to stand behind one in the middle sits down or squats.</i>	<i>sounds of letters of the alphabet stating the sounds correctly matching sounds with words listening and speaking</i>

*Source: G.M Mwinsa*

Emergent literacy skills remain very cardinal in children’s everyday life. Participants argued that *“traditional games facilitate the improvement of language skills such as the use of new vocabulary that children use to socialise with others”* [FGD2]. Games such as the ones listed above were used by teachers in this study to develop children’s listening and speaking skills. They also helped in ensuring that learners acquired confidence and agility in their daily activities for survival in encountered matters of life. The skills acquired in games listed in Table 5.8 are arguably vital in the livelihoods of children, as advocated for by the participants during the focus group discussions.

Teachers in preschools, therefore, need training and retraining in pedagogical approaches for them to manage to teach using play-based approaches that are embedded in the use of indigenous or traditional games. Teachers who have no training in play-based teaching approaches or lack learning through play-teaching skills are known to find it very difficult to teach using traditional games. This was the case with some teacher-participants in this study who expressed ignorance on how to use traditional games in their teaching. One teacher confessed that *“I had not received such training in College and as such, I was struggling to teach using play-based approaches.”* [FGD1].

Traditional games highlighted in Table 5.10 above also show that learners can acquire skills such as identification of sounds of letters of the alphabet and matching sounds with items used in school and at home. Most of the games presented above help learners acquire listening and speaking skills that are necessary for any form of learning that takes place in schools. Other skills acquired include learning new words



or increasing children’s vocabulary, speech development, writing and reading aloud. The findings of this study also showed that traditional games also play a very important role in helping learners acquire emergent literacy skills such as oral language, phonological awareness, print knowledge, and identifying letters, sounds and words. The next section deals with sub-theme 2.

*5.4.4.2.2 Sub-theme 2: Teaching numeracy using traditional games and expected learning outcomes.*

The second sub-theme that emerged from Theme 2 of the focus group discussions was teaching numeracy using traditional games and expected learning outcomes. Teachers were able to explain how they teach numeracy in ECE classes using the stated traditional games. They were also able to show the learning outcomes that emanate from each traditional game used to teach numeracy skills. FGD2 explained, as shown in Table 5.9 below:

**Table 5.9: Application of indigenous games in ECE practice – numeracy skills**

Indigenous/traditional games used to enhance numeracy skills development		
Indigenous/traditional games	How to use the indigenous/traditional games	Numeracy skills acquired
<i>Nsolo</i>	<i>Learners are put in pairs. One player facing the other. Holes are dug on the group with 8 holes in a row. Each play has 2 roles on his or her side. The game is played by moving stones from one hole of the row to the other while counting.</i>	<i>Addition, subtraction, eye-hand coordination, fine motor skills</i>
<i>Chiyato or chiyenga</i>	<i>A circle is dug or made on the ground. Small stones are placed in the hole. Learners are made to sit around the circle. Usually two or three or four players at a time. The player throws a stone in the air and then scoops some stones before the stone that is thrown in the air reaches the ground. The player is not supposed to let the stone fall to the ground. This is repeated until all stones are finished in the hole.</i>	<i>Counting, counting in twos, three, e.t.c, addition, subtraction, eye-hand coordination, matching, seriation, appreciation of texture, manipulation</i>
<i>Chikwampe/waida</i>	<i>Involves jumping a rope held by two participants on each end of the rope. As one player plays in the middle by jumping and avoiding the rope to hit them. The others watching count the number of times the player jumps without being hit by the rope.</i>	<i>Counting, numbers, measuring and rotation</i>
<i>Pada</i>	<i>Lines are drawn on the ground or floor of the class in form of boxes. Teacher demonstrates the games by throwing a small piece of flat stone starting from the first box. Each player jumps where the flat stone has fallen while counting the boxes one skips through to the end of the boxes.</i>	<i>Counting, number sense, shedding, addition, eye-hand coordination, measuring area</i>
<i>Walyako</i>	<i>A heap of soil is made, and a stick or card numbers are placed inside the soil. Learners are made to sit around the heap of soil. Each learner around is required to remove soil from the heap very slowly while singing. A learner who finds a number card is made to state the number or the one who meets the stick first loses the</i>	<i>Number sense, counting, addition and subtraction</i>

	game.	
Kambushi kalila lila/mee mee	Learners are made to sit in a circle. One learner is given a soft object (usually a ball) to hold and run round the group seated in a circle while everyone sings a song. The one playing is supposed to drop the ball behind one of his fellow learners without making them aware that the ball has been placed behind their back. The player then runs around the circle in good time to sit on the spot where he or she dropped the ball.	Shapes, number sense, clockwise movement, subtraction

*Source: G.M Mwinsa*

Games such as *chiyato* or *chiyenga* were found to be used for teaching addition and subtraction to learners. In this game, learners scoop stones from a hole while counting, as shown in Table 5.8. Participants also explained that games such as *pada*, *walyako*, *round us*, *circle game*, *kambushi kalila lila* and *chikwampe* were widely used during the lessons they delivered in preschool classes.

Focus group discussion session 1 indicated that:

*“... the other game is ‘round us’ ... learners learn how to count because when you throw the ball, the learner counts to the target number and if they fail to count to the target number, it’s a loss. By playing ‘round us’ game, there is also sequencing taking place because even if numbers are not written down, children already know which number follows”.*

The game of ‘*round us*’ was found to be very useful in teaching learners how to count and sequencing of numbers in a row. This is vital as learners need to appreciate the mathematical concepts that are useful daily, including what would be of great use in later academics and livelihoods.

The group interviews or focus group discussions also revealed that other games such as *walyako* also play a pivotal role in enhancing the acquisition of numeracy skills in preschool learners. The game is played by: *“... putting soil and a stick In the middle of the soil ... learners play the game by removing soil from the heap slowly ... there is subtraction taking place and the learner who makes the stick In the middle to*

*fall loses the game. Another way is burying the number cards in the soil ... as children remove the soil, they mention the number cards they found*". [FGD1]

The second session of the focus group discussion [FGD2] also had similar explanations with regards to teaching approaches used when teaching numeracy using traditional games. The discussion revealed that: "... *kambushi kalila lila is a game ... played by making a circle with the learners and one learner goes around the circle while singing the song and holding any soft object in the hands. And there is a point in the song where the object is dropped at the back of one learner without telling him or her. All the learners need to be very attentive. The one who finds the ball at their back should stand and try to chase the player until he or she catches him or her. If the one chasing fails to hit the object on the back of the player before he or she sits down on the same spot where the one chasing was, then the one chasing starts to play the game*".

Participants in the group discussions also reported another game that is used to teach mathematical concepts. The game is called '*ball dodging game*' or commonly referred to as '*game*'. This game is played by: "... *involving three learners standing in a straight line, the learner standing in the middle dodges the ball being thrown by the learners on the side. Each time the learner dodges the ball, they count and if the learner reaches the targeted number, it means he or she has won the game. This is repeated several times by taking turns among learners*". [FGD2]

"*Teaching numeracy to ECE learners is not an easy task*", stated the participants in FDGs. It requires a lot of "*creativity and innovation on the part of the teacher*" [FGD1]. Teachers in the FDGs were able to explain how some games are used to teach specific mathematical skills to learners. Identification of numbers, sequencing and counting were major aspects that most local games or traditional games desired to achieve if used by preschool teachers. "*When learners in either middle class or reception acquire some mathematical concepts such as numbering, sequencing, counting and measuring, it becomes easier for them to learn more complex mathematical computations later in life*" argued the participants in the FGD2.

Participants in FGD1 advocated for the teaching of early mathematical competencies to children in preschools through games in order to help them in furthering later education outcomes. The suggestion was that “*the activities would allow the manipulation of objects in a playful manner*” [FGD1]. The use of various games shown in the table above brings about early learning as ECE learners acquire the much-needed skills such as emergent literacy and numeracy. The next section discusses challenges that teachers reported having experienced as they taught preschool learners using indigenous games in their teaching approaches.

#### *5.4.4.3 Theme 3: Challenges teachers face when using indigenous games in teaching*

A third recurring theme that emerged from the focus group discussions was the challenges teachers face when using indigenous games in teaching. The theme discusses aspects that deal with limitations and inadequacies teachers face in their day-to-day teaching profession. From this theme, two subthemes emerged, namely, the challenges faced when teaching emergent literacy and the challenges faced when teaching numeracy skills. I discuss each of the sub-themes below.

##### *5.4.4.3.1 Sub-theme 1: Challenges faced when teaching emergent literacy*

The first sub-theme that emerged from Theme 3 of the focus group discussions was the challenges faced when teaching emergent literacy to ECE learners. The focus group discussion revealed that teaching emergent literacy has its own challenges, which need intervention measures that are specific to the identified problems. Participants in this study indicated that they faced certain challenges when teaching preschool learners due to various factors. The first challenge identified by teachers was enrolment levels that were too high. Some teachers lamented that “*the number of learners was too big, and you find that most games only need 5 or 6 participants. Time management becomes an issue because of the huge numbers*” [FGD1]. Over-enrolment affects the playing of traditional games, as most of the games need small numbers of participants, stated the participants.

Games such as *nsolo*, *chiyenga/chiyato*, *bus game* and *walyako* can only be played by two participants at a given time. This means that the time allowed for each child to participate in the game is limited making the whole essence of the games valueless.

With a moderate enrolment figure, it was expected that learners would benefit more as they would play the game for an extended period. This would allow them to perfect their skills in the game thereby learning making learning of desired skills possible.

The other challenge stated by participants was related to their inability or a lack of it to plan age-appropriate games for children. Teachers complained that some games that they play are too hard for learners aged three and four. One teacher indicated that one challenge she experiences is that:

*“... most of the games involve locomotor skills and the kids are too young, as such 3-4 years have difficult tiptoeing and the balancing is not well established, they cannot tip toe and they cannot jump”. [FGD1]*

The choice of games that are problematic to younger children is due to teachers' failure to plan games that are appropriate for the category of learners one teaches. Games that require tiptoeing can be reserved for children who are older. Children who are younger should be given games that are of their age to avoid harm to the learners. This calls for what the participants suggested that *“children should participate in age-appropriate games in order to get better learning outcomes”* [FGD2].

Teachers who were unfamiliar with the local language also faced language barrier challenges when teaching emergent literacy through traditional games. Some games were local in nature and required to be played using a local language. Teachers found themselves using games that were more familiar to them than those familiar to the learners. As such, children took longer to learn the games, making it less likely for the desired learning outcomes to be achieved within the time allocated for a certain game or lesson. Children therefore spend more time learning the unfamiliar game than playing the game for the purposes of acquiring specific literacy skills. This required teachers to use initiative to learn games that learners were familiar with in order to be effective in their teaching skills. The next section handles a sub-theme that deals with challenges faced when teaching numeracy.

#### 5.4.4.3.2 Sub-theme 2: Challenges faced when teaching numeracy

The second sub-theme that emerged from Theme 3 of the focus group discussions was the challenges faced when teaching numeracy skills to ECE learners. Teachers raised concerns about the challenges or limitations they face when teaching numeracy skills to ECE learners. The limitations and challenges are similar to those raised in Section 5.4.4.1 of this chapter. The focus group discussions highlighted some of the challenges faced by teachers as they endeavour to enhance the mathematical skills of learners that they teach. Some of the matters raised in the FGD1 were:

*“... space is not enough ... weather is not favourable to the young ones [when it is] raining or it is cold you cannot do outdoor games ... lack of sufficient knowledge by the teacher ... age is also the challenge because young learners especially the 3-4 years fail to follow instructions... time allocated for the games is not enough ... lack of interest by the learners ... resources are not enough ... most of the supervisors do not have enough knowledge on ECE ... parents do not understand the teaching methods used in ECE hence end up complaining that the learners only play when they go to school”.*

The issues raised by teachers require serious attention from all stakeholders such as school administrators. Most of the challenges bordered on leadership and management systems that are put in place by the education authorities. However, teachers, for example, were honest enough to recognise that sometimes, they too have inadequate knowledge of how to teach certain mathematical concepts using traditional games or IKS.

It is vital to state that the failure of some teachers to activities that can enhance the acquisition of numeracy skills in learners is a lack of skills in selecting age-appropriate games. Teachers need to be careful with the type of traditional games they apply when teaching specific numeracy skills. The chosen pedagogical approach one chooses to use was also suggested that they needed to be age-appropriate in order to realise the potential that is in learners. *“Selecting games that are not appropriate for the age of the learners makes a teacher’s job difficult and*

*achieves very little as compared to one who selects age-appropriate games”* stated the FGDs

FGD2 raised other matters with regards to challenges faced during the teaching of mathematics to children in ECE classes. The raised concerns included “*language barrier of teachers teaching in a multilingual environment*” such as in Chibombo District. The participants in this session indicated that they “*have language problems as some of them do not know traditional games in Lenje and Tonga languages*” that were largely used in the research site. This presented a challenge to learners as they knew the games differently from the way the teachers knew them, as was discovered in this study during focus group discussions.

The other significant challenge that cut across all schools and participants was the enrolment levels in schools. All ECE classes had a high number of learners compared to the teachers available in each class. The participants stated that “*over-enrolment affects the use of traditional groups because management and control of the learners was very difficult*” [FGD2]. This problem was in every school as the number of learners was above 40 in most of the classes thus making it difficult for teachers to organise and manage traditional games well.

Over-enrolment also noted in this study poses serious challenges to teacher performance, as concentration on each child becomes extremely difficult. Learners equally achieve very little in an overcrowded classroom. Some schools reported having enrolments of up to 100 learners taught by one teacher. The situation was dire in one school where the classroom was very small and had inadequate outdoor classroom space. It therefore remains vital that each teacher handles a smaller number of learners if better education outcomes are to be realised.

The perceptions of parents, other teachers in primary schools and school administrators were said to also affect teacher performance during focus group discussions. Some parents and teachers who had no knowledge of early childhood practices argued that “*ECE teachers just play with learners without teaching them any meaningful*” education content [FGD2]. “*This is another challenge that teachers in ECE grapple with on a daily basis*”, lamented the participants in FGD2. Another

participant during focus group discussion mentioned that the challenge that she faces is *“people’s perceptions because they regard teaching through traditional games as total playing, not learning”* [FGD2]. This challenge has led some teachers to ignore appropriate teaching methods in ECE for fear of being reprimanded by school administrators who are against learning through play pedagogy. The next section deals with intervention measures that teachers in ECE classes can use to solve immediate problems in their teaching approaches.

#### *5.4.4.4 Theme 4: Intervention measures teachers use to deal with challenges faced*

A fourth recurring theme that emerged from the focus group discussions was intervention measures teachers use to deal with challenges. The theme discusses possible ways of mitigating the challenges experienced by teachers as they teach preschool learners. From this theme, two subthemes emerged, namely, coping strategies to improve the teaching of emergent literacy skills and coping strategies to improve the teaching of numeracy skills. I discuss each of the sub-themes below.

##### *5.4.4.4.1 Sub-theme 1: Coping strategies to improve the teaching of emergent literacy skills*

The first sub-theme that emerged from theme 4 of the focus group discussions was coping strategies to improve the teaching of emergent literacy skills. Participants stated that coping with a challenge one faces, especially at work places may not be easy for everyone. Teachers used different ways of coping with various challenges that they faced in their day-to-day work activities. In this study, teachers indicated that they managed enrolment problems by having so many planned games that small groups of learners could take part in led by one child who knew the game better [FGD2]. In this way, the learning took place through peer-to-peer teaching and learning in specific lessons. This is in line with what participants in FGD1 encouraged fellow teachers to do when faced with similar challenges by ensuring that peer-to-peer learning is used in preschools. *“A child who knows how to play walyako, for example, demonstrates to other learners how this type of game is played. The child therefore becomes a temporal co-teacher to his or her teacher in a particular lesson”* stated participants in FGD2.



Participants indicated that games that require a lot of space during play are organised and played in an outdoor space in order to deal with over-enrolment in public schools [FGD1]. Teachers ensured that *“learners were taken outdoors to play on the ground or with soil or sticks to teach a particular skill such as expressive and receptive language”*. This called for innovation and creativity on the part of the teacher in planning outdoor traditional games that would foster the acquisition of specific emergent literacy skills in learners.

Teachers also dealt with teaching large numbers of learners by using a circle teaching approach [FGD2]. In this type of teaching approach, participants in FGD1 stated that *“learners are placed in a circular way while the teacher sits in the middle of the circle. This allows all learners to see the teacher as she or he demonstrates any lesson for the day. This also helps teachers to keep an eye on all learners at the same time. In cases where a sanitation officer was available in the classroom, participants in this study used them to keep an eye on other children while the teacher was working with one set of learners”*. The participants had no trained assistant teachers. The assistants in the classrooms were usually caregivers who had no formal training in ECE but were employed as cleaners or caregivers. The next section presents findings on the use of traditional games in promoting the acquisition of numeracy skills in preschool learners.

#### *5.4.4.4.2 Sub-theme 2: Coping strategies to improve the teaching of numeracy skills*

The second sub-theme that emerged from Theme 4 of the focus group discussions was coping strategies to improve the teaching of numeracy skills. Teachers in this study indicated that coping with challenges one faces at the place of work is a sure way of dealing with the problem before it escalates. Teachers in this study equally suggested ways that they deal with insurmountable problems that they face in teaching, especially when using traditional games to teach mathematical concepts.

A participant in the study stated that she manages the language barrier challenge by consulting those she works with who are familiar with traditional games. She said, *“I always consult where I do not understand, and they translate for me and I write it down so that I do not forget ... asking children because they are also familiar with*

*most of the games*". Another participant added that she manages limitations with the games she does not know by changing the rules in order to suit the needs of learners. The participant indicated that games are "*managed by changing the rules a bit but still making sure the objective is still maintained*" [FGD2].

With regards to perceptions from members of the public on play-based teaching approaches, participants argued that "*teachers need to do more explanations for people to understand early childhood practices. Administrators who have little knowledge of ECE practices can be helped to understand how games enhance skills development in learners. Teachers also need to carry out more awareness campaigns, especially to fellow teachers to make them aware of how young children learn better*" [FGD2]. It is important for parents to know that their children learn better when the lessons are organised in a playful manner than using didactic teaching approaches that are appropriate to older learners in higher grades such as upper primary and secondary level.

Teachers also stated that "*they deal with inadequate classroom space by dividing the learners into smaller groups when giving tasks*" [FGD2]. They also prepare lessons in advance and plan on how to divide the learners so that when one group is working on crafts, the other group is drawing/tracing/painting, while another group is in the construction area where they make various items or objects using clay, sticks or strings [FGD1]. Classroom space is also created by moving furniture into one corner in order to leave space for traditional indoor games especially when the weather is not favourable outdoor [FGD1].

Teachers also use knowledge that learners have on how to play certain games that might be unfamiliar to a teacher. The participants in FGD1 indicated that: "*... sometimes before starting the game, you can ask any learner to do it and mostly, you find that they do it well, therefore, you learn from them. Age is managed by adjusting the game to the level of the learners, and by giving them simple instructions so that they do not get confused*".

Learners with knowledge of how a game is played are the ones who take the lead in showing others, including the teacher, stated the participants. Peer-to-peer learning,

therefore, takes place, which is one way that learners learn faster when IKS is used in preschools.

Regarding inadequate teaching and learning resources, teachers stated they improvise by using their own resources and time to find certain teaching materials. FGD1 indicated that teachers use their *“own resources and local materials to teach, for example, if you want to use a game that requires the use of paper, glue, and crayons as a teacher, you sacrifice by using your own materials”*. This means that a teacher spends some of their own salaries to collect empty boxes from nearby shops and also buy small items such as markers and crayons for making teaching and learning aids. This is indeed a huge personal sacrifice from the teachers for the betterment of early childhood in schools.

The findings of this study show that teachers need to be very innovative in their teaching skills, especially when applying IKS. Participants in FGDs suggested that: *“... teachers should be creative when conducting the lesson ... games should be captivating to grasp the interest of the learners ... just the way games appear should be attractive to the learners ... games should be learner-centred so that learners can show what they can do and what they cannot do ... it allows them to come up with more ideas and as a teacher, it gives insight on where to improve when teaching”*.

The findings show that teachers need to be innovative when planning for teaching in ECE classes. Participants argued that teachers who are innovative can make the teaching of mathematics to learners funnier than it is perceived [FGD1]. Innovation was therefore the surest way to improve mathematical competencies in learners at an early age in preschools [FGD1].

In order for rigour and credibility in research to be achieved, it is vital that researchers use multiple methods in data collection to allow for crossing checking of information in a study. This study used participant observations to look for meaning and explanations for issues that arose in both individual and group interviews. The use of observations also helped to verify whether data from interviews and focus group discussions was credible and trustworthy. The next section therefore deals with the presentation of findings from lesson observations. The researcher was a

participant observer in all activities that were conducted in the classrooms or outdoor.

#### 5.4.5 Data from observations

Observations play a pivotal role in ensuring that the views of participants during individual and group interviews resonate with practice. In this study, participatory observations were conducted on all ten teacher participants as they taught their classes both indoor and outdoor. The observations have been coded as OB1, OB2, and OB3 as shown in Table 5.1. Table 5.10 shows the aspects that were observed from observation of lessons, both indoor and outdoor in the selected schools.

**Table 5.10: Aspects observed during lessons**

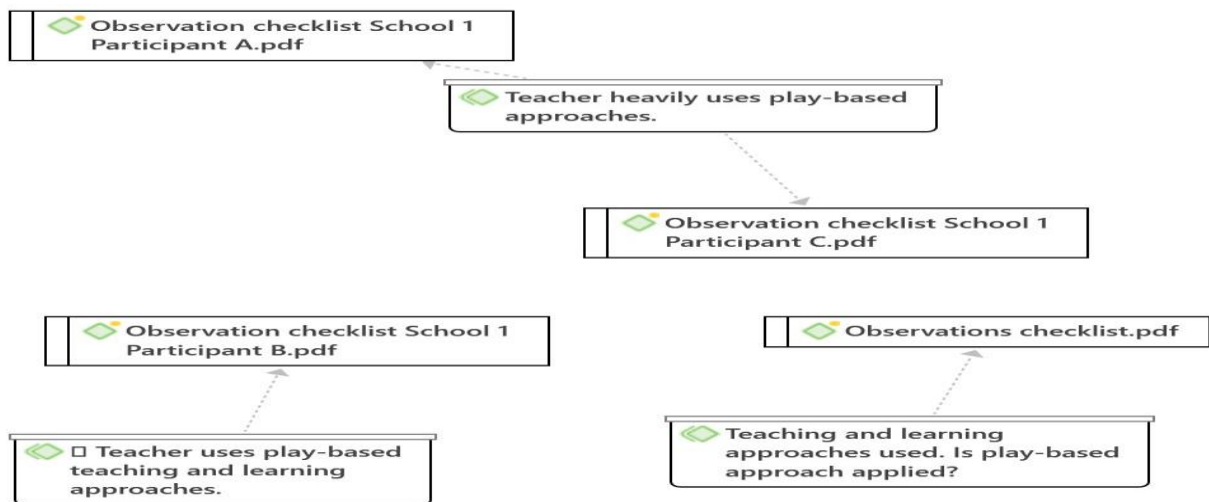
Lessons observed	Teaching approaches	Indigenous games for holistic child development	Classroom /outdoors learning environment	Learner/teacher participation	Researcher intervention	Challenges	Positive skills developed
School 1	Play-based	Nsolo, pada, kambeba, bottle game, bus game	Good classroom with large sports field for all learners	Teacher and learners participate	Appreciating knowledge from home	Inadequate teaching time	Counting, sounds, speaking
School 2	Didactic	Nsolo, chiyato	Dilapidated and isolated class/small area play	Less participation from learners	Supporting peer-peer teaching	Pedagogical limitations	Speaking and sounds
School 3	Play-based and creative	Nsolo, pada, chiyato, kankuluwele, nyenyeezi, mango tainapya	Big and spacious classes, inadequate play ground	Learners participate with enthusiasm/teachers are equally active in play/playful activities used	Engaged in tasks in groups with learners/classes with large sizes	Over enrolment/age-appropriate games/limited play area	Reading, writing, speaking, counting, measuring and matching
School 4	Play-based	Nsolo, pada, chiyato, Kambeba, kankuluwele, mango tainapya, bus game, bottle game	One classroom only and no outdoor play area/class also used as storage room	Learners participate and teachers also endeavour to play/playful activities used	Engaging teachers on games that are learner appropriate	Limited age-appropriate games/no play area	Reading, speaking, counting, measuring and matching

*Source: G.M Mwinsa*

##### 5.4.5.1 Teaching approaches

Early childhood teachers find themselves debating with regards to the type of teaching and learning approaches that are appropriate for a specific learning outcome to be achieved. The teaching approach a teacher chooses to use in a

specific topic like numbers and counting or sounds. It comes from well-thought-out lessons with clear desired outcomes such as learners being able to count from 1 to 10, matching of numbers to items displayed, ability to pronounce words correctly and speaking loudly in public. During class observations of the lesson taught by the ECE teacher in this study, it was apparent that each one of them desired to deliver lessons that were play-based in nature. Figure 5.16 below shows that participants endeavoured to use play-based teaching approaches.



**Figure 5.16: An ad hoc network of teaching approaches teachers used during lesson observations**

*Source: G.M Mwinsa*

All the lessons observed had some playful aspects in them, including tasks given to learners. However, some games embedded in playful teaching were not age-appropriate and in some cases, Western-oriented.

Some teachers who taught reception classes or five to six-year-old children used games that were familiar to the children. For example, OB9 in her lessons used games that were familiar to the learners. The games that were played in one of the lesson for Participant OB7 at School 3 included *matching of household* items in a mathematics lesson. The game was used as the learners knew the items their mothers usually used at home. The items that were used in the lesson were empty bottles of coca cola, Fanta, sugar pack paper, salt bottles and milk shake containers.

The *matching game* helped learners identify items on the chart and match them with physical items from homes. These aspects helped build cognition in children and supported children's mental faculties in recognition of familiar objectives. I worked with the teacher in ensuring that learners were able to match items with the actual salt to the salt bottle, coca cola empty bottles with pictures on the chart and milk shake with own related drawing or picture. The learners who did not manage to match were helped by demonstrating to them the matching items. This was repeated several times until the skill was acquired. Repetition also led to acquisition of memory skills by the learners. The learners who got the skill quickly were taken to other tasks such as matching of coloured stones with numbers on the card or display. This reduced pressure on the teacher considering that the number of learners in this class was 70 and she was the only teacher.

OB4 equally used local games in her lessons and showed some linkages of the knowledge the learners have from home to deliver her lessons through play-based pedagogy. The teacher taught mathematics on number 7. However, the teacher had difficulties in designing age-appropriate games or tools to use. The games she used in her lessons were not user-friendly to middle-class learners who found it hard to play *chiyato/chiyenga*. The children were not enthusiastic about the game, as it proved to be challenging to the learners in the middle class who are less than 4 years. The game was challenging as learners could not scoop stones from a hole up to 7 or add the stones due to the rules of the game. Instead of *chiyato or chiyenga*, I suggested a change of the game to another one such as *run and target game*, generally referred to as *game* which equally taught similar concepts. The game of *chiyato or chiyenga* is known to be useful and user-friendly by children who are older than four years, as it requires slightly higher-order motor skills. The game is more appropriate for reception learners and Grade One who can follow the rules carefully.

The learners were able to count the number of times each one ran from point A to B. They were also able to separate those who reached first at the end point to the number 7. The game also helped learners to socialise with each other. In the process, social-emotional development also took place, as those who did not run fast learnt to contain their emotions while those who ran fast also learnt that not all

learners can run at the same pace. Cognitive development also occurred as children learnt counting, numbers and memory.

Teachers at School 2 used play-based teaching and learning approaches that were more Eurocentric in nature than traditional games. The lessons observed revealed that teachers largely depended on western songs, games and play activities than their counterpart teachers in the other three schools. The teachers at this school showed little knowledge of IKS and opted for Eurocentric games more than local ones in their daily lesson delivery with little success in achieving the desired learning outcomes. The learners at School 2 also seemed to be unmotivated with little or no interaction as compared to times when the teacher introduced traditional games in the lessons.

The teachers at School 2 were teaching middle class and reception learners. The lesson for OB5 was adding and subtraction. The teacher used *nsolo* to teach concepts of addition and subtraction to middle class learners. The game lasted for more than an hour per session. Learners could not grasp the tasks because they could not follow the rules of *nsolo* to tackle adding and subtracting stones for each participant. Learners informed the teacher that the game was not familiar to them. I took time to demonstrate how the play is played to some groups of learners. However, within the allocated time, the expected learning outcomes were not achieved as the classroom was needed for another class. This made the teacher to postpone the lesson to another day.

It was evident that lessons that do not use traditional games, especially when learners are based in rural schools with little or no access to modern Western play, materials have significant limitations in achieving desired learning outcomes. Throughout the lessons, teachers at School 2 did not take time to guide learners on key learning areas that the lesson was focused on. In a lesson delivered by OB5 stated earlier, the teacher introduced a game of *nsolo* to female learners. The learners did not seem interested in the game, as it is a largely male-dominated game. I encouraged the teacher to mix boys and girls in the same group, as they played the game for each one of them to learn from one another. Boys who enjoy *nsolo* were able to teach girls how to play the game while girls also taught boys how

to play *chiyato* and *pada* which are predominantly known to be female-played games.

During lesson presentations, teachers at School 1 did not use initiative in linking the knowledge that learners were bringing to the classroom from home. In a lesson by OB3 at School 1, a teacher even made frantic efforts to stop a child from playing a game in the manner that was familiar to the learner. Teachers did not realise that learners come to school with some knowledge of games which they are able to use during lessons. In this instance, I asked the teacher to allow the learner to demonstrate the game in the manner that he wanted to play it. I ensured that the learner was allowed to play the game following the rules that he or she knew about that game. I also mentioned to the teacher that my interest was to see a game meeting its intended purpose of enhancing learning in learners. As such, if the game promoted the acquisition of literacy and numeracy skills as well as enjoyed by the learners, the way it was played did not matter.

I also insisted to the teacher that what was more important was ensuring that learners enjoyed the games they were playing. That would make it much easier for the teacher to achieve the planned learning outcomes for the lesson. I also explained to teachers that it was vital for them to be focused and attentive to children's agency and learning needs. In the long run, I saw that my suggestions would help learners cement the knowledge that they already knew from their homes in order to enhance the acquisition of emergent literacy and numeracy skills. Learners benefitted from the lesson, as they learnt from their peers how to play the game, which in turn enabled them to count numbers correctly.

OB2 found it very useful to allow learners who had a different version of playing *nsolo* to show the other learners how to go about it. The teacher later confirmed that learners were able to follow the method of play from their fellow learners rather than the method the teacher knew. This made the lesson presentation much simpler for her and the learners benefitted greatly from their peers than from the teacher. The teacher in question, therefore, used the learners' knowledge to build her lesson with less difficulty. This approach assisted all of us to help learners acquire skills in



counting, addition, subtraction, and measurements with less difficulty. The next section covers the classroom and outdoor environment that was observed.

#### 5.4.5.2 Classroom and outdoor learning spaces

The indoor and outdoor learning environment plays a significant role in fostering the acquisition of skills by ECE learners. Teachers and school administrators are encouraged to work diligently to ensure that the indoor and outdoor learning/play spaces are well-managed and well-organised for better learning outcomes. In most urban schools in Zambia, outdoor learning spaces have shrunk significantly due to mushrooming residential settlements growing around the school land. In rural areas, however, the situation is somewhat different as most of the schools have enough space to create outdoor learning spaces that are appropriate due to the vastness of land.

In terms of indoor learning environments, three of the sampled schools had adequate learning/classroom space for learning to take place. School 2, however, had inadequate classroom space and the room that was being used as a classroom was an abandoned block with a roof almost falling off. The classroom was isolated from the rest of the school classrooms and had no proper ventilation and lacked needed writing board.

At School 4 for instance, the ECE classroom was also used as a storage room for Grade 7 and Grade 9 past examination papers. The use of the classroom for other purposes other than being a classroom led to the classroom shrinking of space that could be used for playful activities. The situation at this school was even made more difficult as the school does not have adequate outdoor learning space for games and activities that require running and jumping such as *circle game*, *touch*, *skipping*, *kambushi kalila lila mee* and *walyako*. Children at this school could not play such games well as the space inside the classroom and outside was inadequate. The limited outdoor and indoor space was further exacerbated by over-enrolment that is being experienced in most public schools in a country due to free education that was introduced in 2022. In this school, I worked with teachers to pack classroom furniture in one corner in order to create space for more indoor games such as bus game, bottle game, waida, pada which were played in the classroom. The games chosen to

replace outdoor games equally led to similar outcomes such as sounds and numbers in the bus game, counting and memory in pada, and counting, matching and numbers in the bottle game.

Another example of the classroom learning environment being inadequate was found in School 3 whose enrolment levels were the highest in the area. The school is in an area that is slowly turning into a peri-urban community due to the expansion of the nearby city. The school environment is big with very spacious classrooms. However, over-enrolment has made the school and classroom spaces to become inadequate. For instance, all the ECE classrooms at this school have more than 70 learners. Each of these classes is taught by only one teacher with no assistant teachers.

In a class taught by participant OB6, the teacher/pupil ratio was 1: 110. It was clear that participant OB6 faced enormous challenges on how best to engage in play-based teaching and learning. The teacher was teaching days of the week in a literacy lesson. She assigned learners to groups of five learners, in some cases, the number of learners was even more than five in a group. She gave tasks such as playing with stones in one and dices made from used card boxes in another group. She checked on the progress per group and ensured that each learner was participating. I took the role of a helper who assisted in managing activities going on in groups, as we had shared the number of groups each one was managing. The collaborative approach that we used in this lesson helped to deal with over-enrolment, as the learners were able to work with a more competent peer while teachers were monitoring the process.

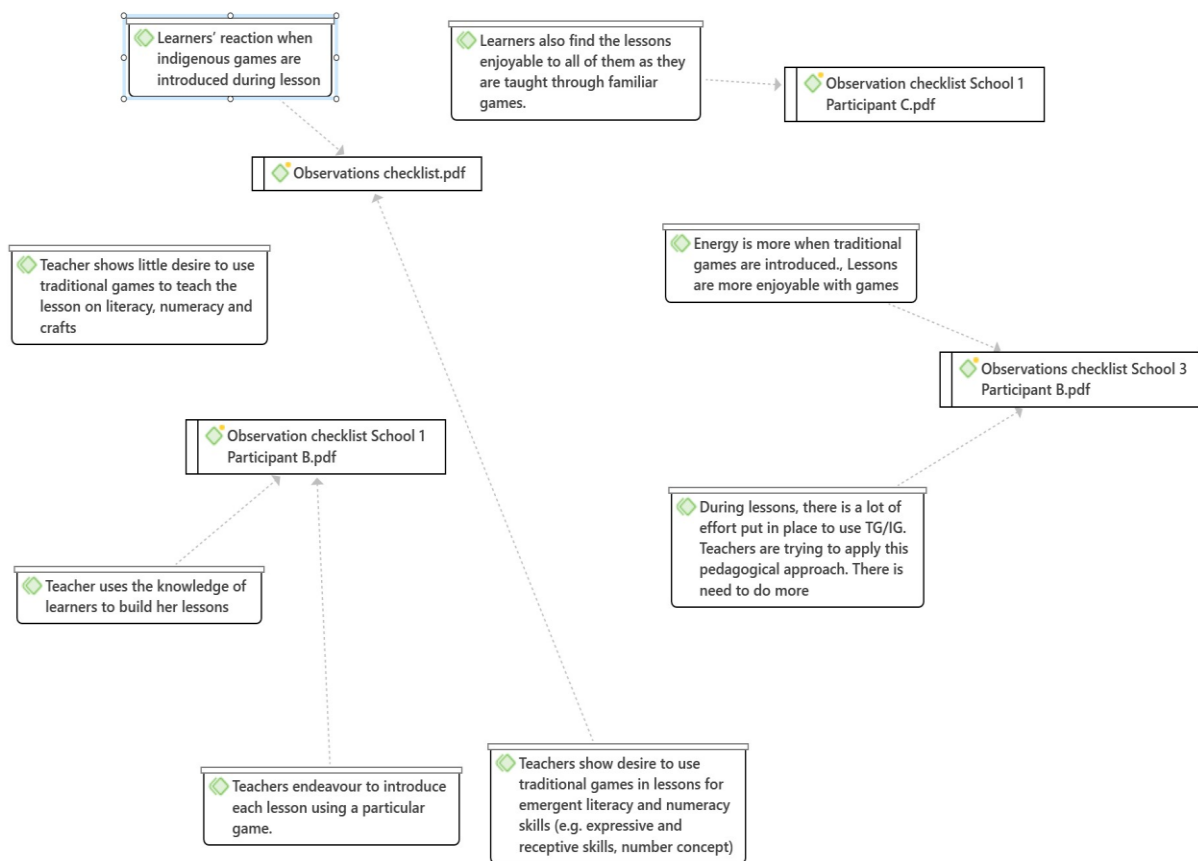
Outdoor learning spaces for most rural schools are readily available in the form of a playground usually used by adult learners to play football, netball and other adult sporting games. Schools have no resources to secure the playgrounds in fenced form so that it is only used by ECE learners. Most schools use the front part of the classrooms for activities that promote emergent literacy acquisition such as writing on the ground and playing with sticks and stones in order to learn some mathematical concepts such as number sense and simple arithmetic. The activities that children were engaged in during this study usually varied depending on the

available space for play. Some activities that did not require a lot of space such as *waida*, *chiyato* and *nsolo* were played in the classrooms.

Games such as *tachi*, *circle game*, *kambushi kalila lila mee* and *pada* required a lot of floor space to be used for the game to be executed adequately and for learners to enjoy the play. These games could only be played at schools where they had inadequate outdoor space for use. The availability of large outdoor spaces in one or two schools made it difficult for learners to learn skills that their counterparts in schools with large outdoor spaces were learning. The next section handles an aspect that is very vital in teaching, the use of indigenous games in schools and how learners and teachers participated.

#### *5.4.5.3 Learner/teacher participation*

Participants OB9 and OB10 who both taught in one school used games such as *chikwampe*, *craft* and *songs* when teaching the counting of numbers to their learners. The games were done in the classroom after creating space for the holding of rope by two participants. The children took turns playing the game, one after the other. The desire by all learners to participate in the game was seen by how attentive they were to notice a mistake in their peer so that they could stop such a player from playing the game so that another one would play the game. The ad hoc network in Figure 5.17 presents teacher efforts and learner reactions when indigenous games were introduced in lessons observed during the study.



**Figure 5.17: An ad hoc network on use of indigenous games and learner reaction**

*Source: G.M Mwinsa*

Some teachers, however, were found to have had little interest nor effort in using traditional games in their lessons. Nevertheless, most of the teachers had a great desire to teach using local games. Over-enrolment and inadequate classroom space made the situation difficult for both teachers and learners to try the game before moving to the next lesson. As a result, some learners never managed to take part in some games, making it difficult for the teacher to ascertain whether such a child had acquired the skill of counting or measuring that his or her peers had done during the time of playing the game.

Learners were very excited whenever traditional games were introduced in a lesson. A visit to one of the schools exemplified this aspect very well. One of the learners in the class was not participating in anything that the teacher was doing that day with other learners. I took time to find out from the teacher what was the problem with the child. The teacher responded that “*she comes like this to school sometimes and is*

*usually withdrawn*". I asked the teacher what she did in situations like the one we had that day. The teacher informed me that all she did in such situations was to sit next to the child in order to make the child feel cared for and loved. As the day progressed, however, the teacher introduced a game of *pada* [played by participants with closed eyes to ascertain the position of lines and ensure that the player did not step on the dotted lines] which led to a change in the atmosphere immediately. What was interesting was that even the teacher was amazed that the child who was withdrawn for over an hour was the first one to rise from the floor and offer to be the first one to play the game. This showed that children do not enjoy didactic methods of teaching but rather are interested in play-based learning.

In all the schools where data was collected, the reaction from learners whenever the teacher changed the pedagogical approach to the use of games, the atmosphere in class improved completely. Learners were more enthusiastic with participation in games than when the teacher was using didactic teaching methods. There was happiness in the classrooms the moment a game was introduced, especially if the game introduced was familiar to learners. I noticed that learners were more enthusiastic when traditional games or local games were introduced than when Western games.

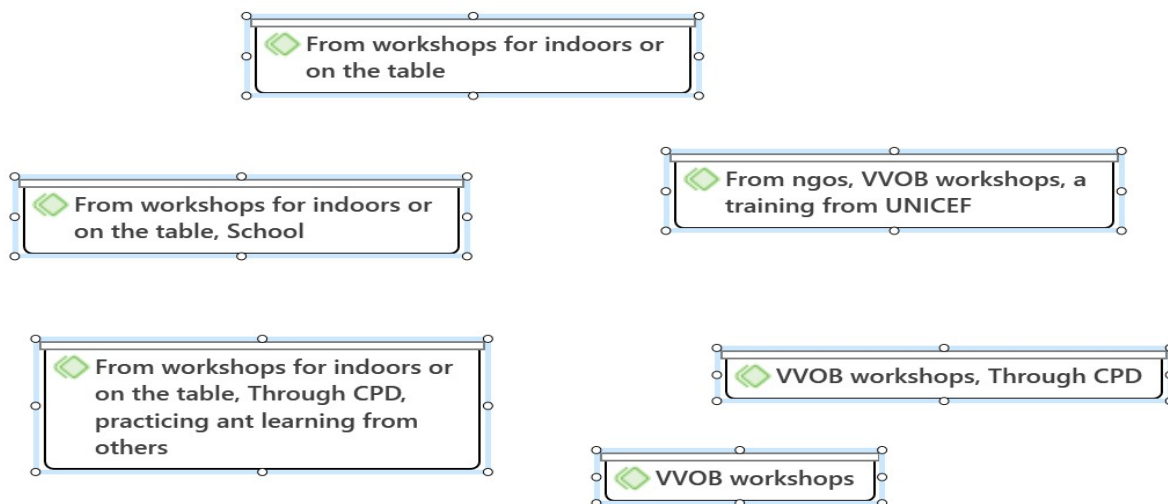
During the research project, teachers used more traditional games than Western games, as they noticed that learners were more engaged in the local games than the Eurocentric games. Some teachers stated that they had learnt a lot of things in the research and that they would continue using traditional games in their teaching career. The research also motivated some teachers to think deeper about the teaching methods of any lesson during planning in order to identify appropriate pedagogical approaches that would stimulate learner involvement. A teacher at one of the schools indicated that the project had opened her mind to the extent that she now saw any game being played in the community as a possible teaching approach for a specific topic in her early childhood classes [FGDs]. The next section deals with challenges teachers faced during lessons and how such limitations were dealt with.

#### *5.4.5.4 Challenges teachers face when using indigenous games in teaching*

Teachers showed several challenges in their teaching, especially when requested to teach using play-based methods that need the use of traditional games. Some of the challenges observed included classroom space which has been discussed earlier in this chapter in detail. The challenge was both indoor teaching and learning space as well as outdoor teaching and play spaces. Some schools had plenty of outdoor spaces while others had little or none. Some schools had very large classroom spaces while others had very limited spaces for classroom activities.

School 1 had one classroom which was used for both middle class and reception. The school had three sessions in a day; the first one started at 0800 hours in the morning and ended at mid-morning, the second one run from 1030 hours to 1230 hours and the third one started at 1300 hours and ended at 1600hrs. The challenge with these kinds of sessions was that the teaching and learning time was limited without any room for free play when class time ended. Teachers were forced to run through the activities for them to cover the work scheduled for the week. The rushing of teaching time and activities meant failing to give adequate and ample time for learners to learn from one another through interactions as the classroom was needed for the next class immediately after the teacher completed his or her tasks for the day. Learners did not have time to try out many things both indoor and outdoor outside the planned lessons. This compromised the ability of learners to learn from practising activities on their own after the lesson was concluded.

Another matter that arose in this study was that teachers lacked skills in using games especially if they had not been exposed to workshops and CPDs. The ad hoc network below shows that teachers acquired skills in using play-based teaching approaches from workshops, CPDs and other training conducted by NGOs who work with the Ministry of Education in various parts of the country.



**Figure 5.18: An ad hoc network on CPDs and workshops for ECE teachers**

*Source: G.M Mwinsa*

The ad hoc network above shows that almost all teachers in this study did not have prior training in using traditional games during their teacher training at a university or college (see figure 5.18). In fact, all teaching methods that used play-based pedagogy were learnt through workshops and continuous professional development (CPDs) sessions in schools. Unfortunately, it was clear from the observations that teachers who had no opportunity to attend workshops or CPDs organised by Ministry of Education partners stated earlier did not acquire play-based teaching skills. The participants who lacked this exposure performed poorly when it came to the implementation of playful teaching methods using traditional games as seen in the findings from some schools.

Another challenge that I observed in the lessons was the inability of teachers to be creative and innovative during planning and lesson delivery. In my engagement with teachers over the last few years that I have worked in ECE, I have learnt that ECE requires a lot of creativity and innovation if one's lessons are to bear fruit. This is what I continued to echo in the teachers who participated in this study. Unfortunately, some teachers lacked the zeal and creativity that is necessary for ECE teachers to thrive. Some teachers largely conducted themselves as though they were teaching older grades such as primary learners. The research helped such teachers to become more creativity, as they realised that lessons were more enjoyable for learners if they included a playful aspect in the teaching process. In fact, it was

noticed that teachers began liking the local games, as they found them easier to use in the teaching process. In the next section, I shift my attention to holistic child development that teachers endeavour to support.

#### *5.4.5.5 Indigenous games for holistic child development*

Indigenous games have a history of supporting holistic child development in many parts of the world where they have been tried and used in ECE classes. Evidence from research shows that indigenous games, when applied appropriately in ECE lessons, can bring about significant cognitive development in children. In this study, findings revealed that traditional games or indigenous games enabled learners to improve their self-esteem and self-confidence. Children were able to play games such as *walyako*, *pada* and *circle game* with confidence. The results of playing the said games allowed learners to improve on their ability to appropriately use sounds for /a/, /b/, /c/, /d/, /e/ and /f/ [*Observations from the field*].

Lessons from Participant OB7 showed that learners were able to ‘play very advanced games with precision’. Games such as *waida*, *pada* and *nsolo* are usually played by much older children than three- to four-year-old. Most children who play games such as the ones mentioned in the lesson for participant OB7 are usually those in reception and lower primary school grades. This is because games that were played by the teacher and learners in the lesson under discussion required more advanced rules and precision during play. Younger children who were below five years old found the games difficult to play as such, teachers tried to use age-appropriate games for this age such as *bus game* and *circle game*.

One of the participants at a named school admitted at the end of the observations that what she had learnt had helped her to make a lot of strides in breaking through to literacy due to her use of traditional games during this study [OB4]. Another teacher lamented, “... *before the research started, we didn’t know how to use traditional games, but now I am confident in using them*” [notes from OB3]. Further, other participants added that “*learners are now enjoying the lessons that we plan and teach as we are using familiar games from the local community*” [OB6 & OB7]. The observations equally showed that learners were enjoying the lessons as they were more engaged than when I started the research. It was also evident that



indeed, in the long run, learners would be able to develop holistically, as they were more confident and showed the ability to participate in lessons than when we started the research process.

In some schools, teachers struggled to implement learning through play by using indigenous or traditional games because lessons taught by the teachers in one of the schools remained largely didactic with little use of play-based pedagogy. However, I worked with teachers in the schools to help them improve on use of local games for skills development in learners. By the end of the research study, there was a significant improvement in the use of locally available materials and traditional games in lesson delivery by teachers.

In some schools, teachers applied play-based pedagogy using games that were not traditional in nature. This was seen in songs used that were Western-oriented in nature and not age-appropriate such as songs on the *moon*, *sun* and the *earth*. The said songs were unfamiliar to the learners making the lessons unenjoyable for the children in the classroom. I therefore encouraged such teachers to take time to learn local songs with local content, which would be used to teach similar concepts in a much easier way. It was gratifying to see that most teachers made significant efforts to improve on selection of appropriate teaching approaches. This was achieved through working together with the teachers to help improve pedagogical approaches. Considering that observations have their own limitations in data collection, I also analysed documents such as schemes of work, lesson plans and daily routines, and records of work. I present the findings of document analysis in the next section.

#### **5.4.6 Data from document analysis**

Documents used by teachers in their teaching/lesson delivery elucidate vital information on planning and implementation of key aspects of learning in schools. This section presents findings from documents used by teachers in schools, namely, school curriculum and or syllabus, schemes of work, weekly forecast, daily routine schedules, lesson plans and records of work. The aim was to find out whether these documents have indigenous/traditional games included in them which teachers can apply in their lesson delivery.

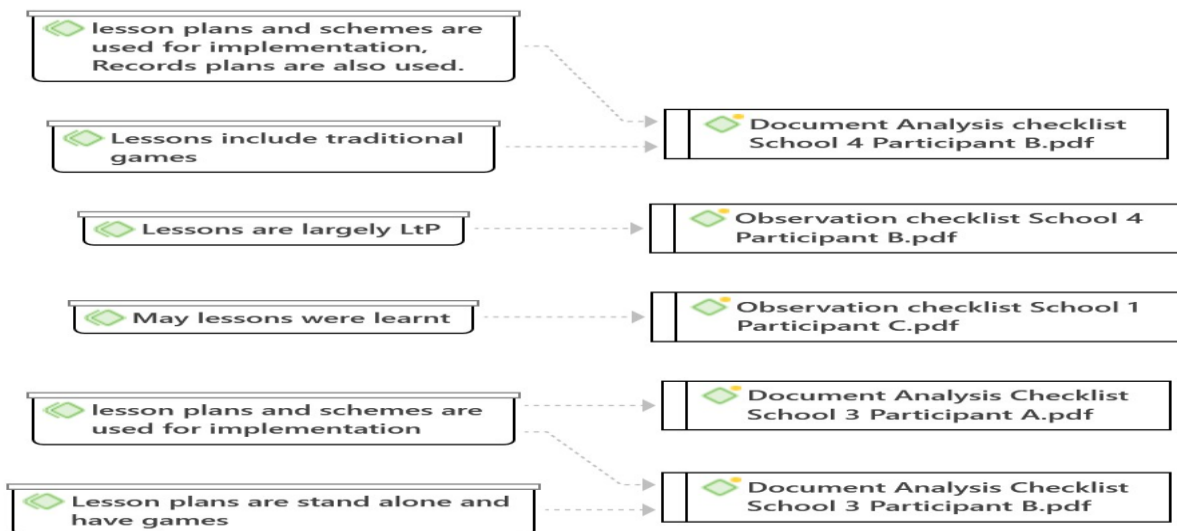
**Table 5.11: Documents collected**

Schools	Documents
School 1, 2, 3 & 4	<ul style="list-style-type: none"> <li>• school curriculum</li> <li>• schemes of work</li> <li>• weekly forecast</li> <li>• daily routine schedules</li> <li>• lesson plans</li> <li>• records of work</li> </ul>

*Source: G.M Mwinsa*

**5.4.6.1 Theme 1 – Indigenous games used in teaching literacy and numeracy**

A recurring theme that emerged from an analysis of documents indigenous games used in teaching literacy and numeracy. Participants shared their views on indigenous games that are used to teach emergent literacy and numeracy to ECE learners. The ad hoc network in Figure 5.19 presents some extracts from the participants which shows that some traditional games are included in schemes, lesson plans and records of work.



**Figure 5.19: Shows an ad hoc network of lesson plans and schemes of work**

*Source: G.M Mwinsa*

The ad hoc network above shows that the subthemes that emerged from this theme are documented indigenous games in schemes of work, documented indigenous games in weekly forecasts and daily routine, lesson plans as implementation plans

and records of work after lesson delivery (see figure 5.19). I discuss these sub-themes below.

#### 5.4.6.2 Scheme of work

The first sub-theme that emerged from Theme 1 of document analysis was documented indigenous games in schemes of work. The table below presents findings on the schemes for an academic year or term in preschools (see table 5.12). Teacher's schemes of work are planned for the whole year in Zambian schools.

**Table 5.12: Traditional games in schemes of work**

School	Participants	Schemes of work
1	DA	<i>Games are schemed</i>
	DB	<i>Learning through Play is schemed</i>
	DC	<i>Does not show involvement of games</i>
2	DD	<i>Games are available/schemed but are not traditional games</i>
	DE	<i>No identifiable local games</i>
3	DF	<i>Games are planned but largely not traditional</i>
	DG	<i>Planned games are Eurocentric in nature</i>
	DH	<i>No identifiable local games</i>
4	DI	<i>Minimal use of games is planned</i>
	DJ	<i>Activities show use of games</i>

*Source: G.M Mwinsa*

Schemes of work are a vital component in a teacher's daily work schedule and delivery of lessons because they show what a teacher has planned to do in a term or year, and it acts as an implementation plan. From the findings presented in Table 5.12, it is clear that some teachers lack the knowledge and skills to plan for traditional or local games in their schemes of work. The teachers who include games in the schemes of work do so with less emphasis on traditional or local games.

It was clear from the findings that teachers find it easy to use Eurocentric games due to the type of training they went through. It is also evident that a teacher who does not plan for traditional or local games in their schemes of work cannot use them in lessons. However, I argue that failure by a teacher to include a specific teaching strategy in the schemes of work does not necessarily mean that they would not use such a teaching strategy in the delivery of a lesson. It is vital to argue that teachers' ability to implement a specific teaching strategy resonates well with what one can

include in the schemes of work for a specific academic period. The next section looks at documented traditional games in weekly forecasts and daily routines.

#### 5.4.6.3 Weekly forecast and daily routine

The second sub-theme that emerged from Theme 1 of document analysis was documented indigenous games in weekly forecasts and daily routines. Preschool or ECE teachers are known to prepare weekly forecasts and daily routines that they follow from the opening day to the closing of the school term. The weekly forecast provides a detailed plan of what a teacher intends to cover in a respective week. From a weekly forecast, teachers also prepare a daily routine that shows the plan for how each day would be handled from the arrival of learners to the dismissal of learners. The findings from the field suggest that teachers are competent in the preparation of weekly forecasts and daily routines. The challenge that most teachers face is how to include local games or indigenous games in their daily schedules.

The school learning timetables depict the scheduling of individual standalone subject/learning areas that are normally taught in preschools. During each lesson, a teacher is supposed to have skills and knowledge on how to incorporate traditional games in order to enhance learning in a certain subject area. For example, a daily schedule or weekly schedule would show the teaching of numeracy or pre-mathematics on a specified day in a week. Teachers are supposed to plan the daily routine in such a manner that all teaching and learning of pre-mathematics is done using local games for learners to acquire a specific mathematical concept as per syllabus requirements. The figure below illustrates the inclusion of traditional or local games in the weekly forecast and daily routines for preschool teachers in Chibombo District (see table 5.13).

**Table 5.13: Traditional games in the weekly forecast and daily routine**

School	Participant	Weekly forecast and daily routine
1	DA	<i>Play-based teaching and learning is scheduled</i>
	DB	<i>Suggested games are included and play-based teaching and learning is scheduled</i>
	DC	<i>Little involvement of local games in the schedules</i>
2	DD	<i>Shows use of games but not specifically traditional games, teachers uses more western games</i>
	DE	<i>Games are planned for, however, the games are not local in nature</i>
3	DF	<i>Largely western games are scheduled with little or no traditional games</i>
	DG	<i>Little or no inclusion of traditional games in the daily plans</i>
	DH	<i>Specific traditional games are planned e.g. nsolo, pada, waida</i>

4	DI	The scheduled games are Eurocentric in nature, daily routine has western games largely planned
	DJ	Games are planned with little emphasis on traditional games

*Source: G.M Mwinsa*

The weekly forecasts and daily routines presented above portray a large use of western games in planned activities in ECE classrooms. The games that teachers included in their weekly and daily programme were picture games that required learners to identify objects in the picture or explain events that they were seeing in the presented visual portrayals. Other games included stripes, recitation games, role play, charts and sound card games. These games are largely Eurocentric and difficult for learners in rural areas. Games such as the ones mentioned above present a difficult situation for learners in rural parts of Zambia who have little or no access to western games. Eurocentric games would be more appropriate in urban schools where pictures and other visual portrayals are readily available for most learners. However, this might not be the case for learners in rural areas where even a phone network does not exist.

The weekly forecast and daily routines also showed games that are not age-appropriate. For example, some teachers had planned to use *chiyenga or chiyato* in teaching addition, subtraction and number concepts in middle-class lessons. The lessons proved difficult during implementation, as the game was too complicated and required older children such as those who are six years or older to play such games. The rest of the children found the game boring and were less enthusiastic about it making it difficult for the teacher to achieve the planned goals of the lesson.

#### 5.4.6.4 Lesson plans

The third sub-theme that emerged from Theme 1 of document analysis was lesson plans as implementation plans. Lesson plans are a hallmark of any teaching and learning that can take place in an educational institution. Table 5.14 presents the findings from teacher's files on planned lessons and inclusion of traditional games when planning lessons for emergent literacy and numeracy skills.

**Table 5.14: Inclusion of traditional games in lesson plans**

School	Participant	Lesson plans
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1	DA	<i>Games included but not traditional games</i>
	DB	<i>Traditional games not included, other games not clearly indicated</i>
	DC	<i>Activities have an inclusion of games</i>
2	DD	<i>Most activities planned in the lesson are Eurocentric in nature</i>
	DE	<i>Games are available in lesson plans but are not local in nature</i>
3	DF	<i>Limited number of traditional games included</i>
	DG	<i>Lesson plans have included games in them</i>
	DH	<i>Traditional games are included in lessons</i>
4	DI	<i>Activities have no clear games</i>
	DJ	<i>Lessons have traditional games included, flow of use of traditional games</i>

*Source: G.M Mwinsa*

The findings presented above have shown that teachers in schools lack skills in how to incorporate traditional games in the lesson plans. In some cases, teachers even have challenges, including any time of games including western games. This situation is worrisome as teaching and learning is supposed to be through play. The reason for this theorisation is the nature of children and childhood in any part of the world. Children enjoy playful activities that stimulate them to engage in various games that they love and enjoy. It is for this reason that teachers work extremely hard to ensure that learners find the classroom environment enjoyable.

The findings from the analysis of documents reviewed that very few preschool teachers have the ability to plan lessons well enough for them to include play-based activities that stimulate learning in ECE learners. Teachers in this study were found with incomplete lesson plans, no lesson plans available and indeed ill-planned lesson plans. In situations where lesson plans were well documented, the games included were either not age-appropriate or Western games without the needed teaching materials for such games to be executed effectively. As a result, lessons were not conducted as planned due to inadequate planning on the part of teachers.

Teachers also found it difficult to avail documents that they prepared for their lesson delivery for some unknown reasons. In this study, it became evident that some teachers were not eager to share their teaching files for me to have a look at what they prepare in terms of lesson plans among others. The teachers who availed their teaching files without even asking them were found with adequate records of work done including all planned activities in a well-documented manner. The teachers who reluctantly availed their teaching files had incomplete documents or some

documents were unavailable. A lack of planning of lessons or inefficiently planned lessons were found to be reasons for failure to teach effectively especially using play-based pedagogical approaches.

#### 5.4.6.5 Records of work done after lesson delivery

The fourth sub-theme that emerged from Theme 1 of document analysis was records of work done after lesson delivery. Table 5.15 presents records of work done by teachers after teaching has been concluded in a class. It is a requirement for teachers to make records of all activities that have been done in their lessons in order to show progress or a lack of it in a school term or school year.

**Table 5.15: Records of work done**

School	Participant	Records of work done
1	DA	Show activities that are done
	DB	Show activities that are done
	DC	Shows that learners are taught through play
2	DD	Shows use of games, however games are Eurocentric in nature
	DE	Shows that games used in a few instances
3	DF	Shows few comments on how games were used in the lessons
	DG	Shows use of games in lessons
	DH	Few comments are available on use of games in lessons
4	DI	Shows of use of games, but used less times
	DJ	Shows use of games but some games are not age-appropriate

*Source: G.M Mwinsa*

Records of work done are very cardinal in a teacher's teaching profession. They play a role in identifying gaps that need to be filled in by either the class teacher or the supervisor. In the absence of a class teacher, records of work done help the next teacher to identify where to start. This helps teachers and supervisors to monitor progress being made as well as assist in remedying any areas that might require strengthening.

The findings show that teachers who participated in this research had documented records of work done. However, most records lacked vital information on all activities done especially with regards to teaching strategies that teachers were using in their lessons. Some teachers confessed to not having recorded some activities done in lessons as they did not see the necessity of doing so. Teachers only recorded issues that they thought were vital for their records without putting adequate details of all

work done in the course of the school term. I now shift my attention to Theme 2 which looks at indigenous games as pedagogical approaches for emergent literacy and numeracy skills.

#### 5.4.6.6 Theme 2- Indigenous games as a pedagogical approach for emergent literacy and numeracy skills

Another recurring theme that emerged from document analysis was indigenous games as a pedagogical approach for emergent literacy and numeracy skills. Participants shared their views on teaching approaches that teachers use to teach emergent literacy and numeracy to ECE learners. From this theme, one subtheme emerged, namely, evidence of the use of traditional games by ECE teachers. I discuss this sub-theme below.

##### 5.4.6.6.1 Sub-theme 1: Evidence of use of traditional games by ECE teachers

One sub-theme emerged from Theme 2 of document analysis. This sub-theme was evidence of the use of traditional games by ECE teachers. The analysed documents used by teachers in teaching preschool learners in Chibombo District were of great help in determining whether teachers use traditional games or not in their lesson planning and delivery. Table 5.16 shows this evidence and helps me to make the necessary conclusions.

**Table 5.16: Overall evidence of use of traditional games by ECE teachers**

School	Participant	Overall use of traditional games by ECE teachers
1	DA	<i>Games are used in lesson delivery</i>
	DB	<i>Traditional games are used in lesson delivery and its documented</i>
	DC	<i>A variety of games are documented in lesson plans</i>
2	DD	<i>Very little evidence of use of games</i>
	DE	<i>Traditional games seem to be used but with less impact on academic concepts as they are not age-appropriate</i>
3	DF	<i>Evidence of use of games exists in the documents but no mention of traditional games</i>
	DG	<i>Some evidence of use of games exists in the document but little emphasis on traditional games</i>
	DH	<i>Evidence of use of games exists in the documents but little emphasis on traditional games</i>
4	DI	<i>Teachers uses games but not on daily basis as shown in documents</i>
	DJ	<i>Evidence of use of games, though some games are Eurocentric</i>

*Source: G.M Mwinsa*



The findings above present a picture that shows that teachers largely endeavour to incorporate games in their schemes of work, weekly forecasts, daily routines, lesson plans and records of work done. The findings also show that lesson plans are largely used as implementation plans for all activities planned in ECE classes. However, what is lacking in several ECE teachers is the inclusion of traditional games in the teaching and learning process of learners. Most games that learners are exposed to are Eurocentric in nature making it very difficult for children to benefit from such games. It also creates problems of implementation among teachers as they claim to have a lack of teaching resources and materials for use during their lessons.

The challenge of a lack of teaching materials and resources only emerges when teachers are not innovative for them to use locally available materials and games for rural areas. In schools where teachers use innovation by collecting local materials such as bottle tops, thrown-away boxes, stones and sticks to produce teaching materials, problems of making teaching and learning materials do not arise. This is exemplified by teachers who showed initiative in the production of teaching materials from waste materials picked from market places near schools as seen during some lesson observations. The next section discusses the challenges teachers face in planning of lessons that use traditional games.

#### *5.4.6.7 Theme 3 – Challenges teachers face when using indigenous games*

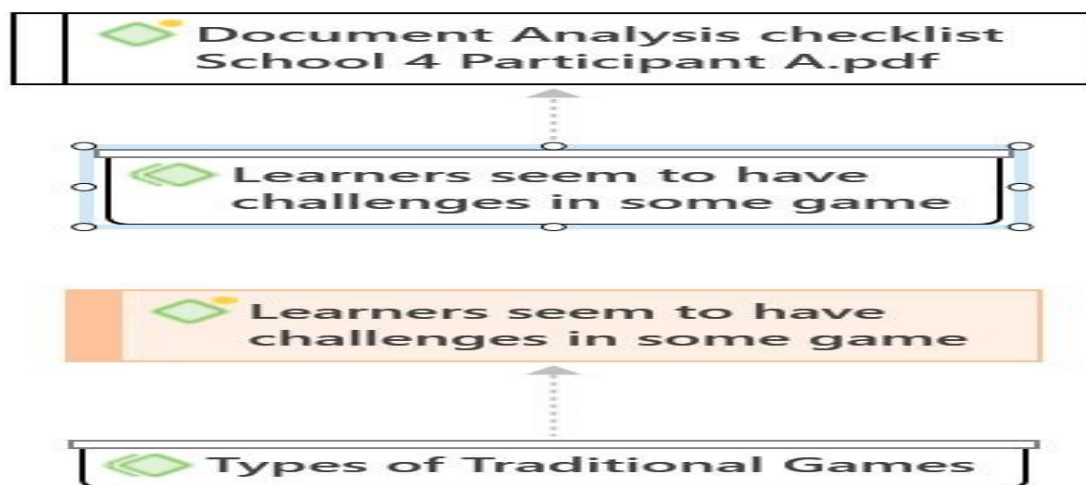
A further recurring theme that emerged from document analysis was the challenges teachers face when using indigenous games. Participants shared their views on difficulties or limitations that they encounter as they teach emergent literacy and numeracy to ECE learners. From this theme, one subtheme emerged, namely, the challenges teachers face in planning lessons that use traditional games. I discuss this sub-theme below.

##### *5.4.6.7.1 Sub-theme 1: Challenges teachers face in planning lessons that use traditional games*

The only sub-theme that emerged from Theme 3 of document analysis was the challenges teachers face in planning lessons that use traditional games. The analysis of documents showed that teachers have serious difficulties to plan for lessons that use local games. The use of traditional games is also rarely mentioned

in most documents of the participants. The majority of teachers showed planned activities of games that mostly were Eurocentric in nature rather than those that would use locally available materials. This was noticed as the biggest challenge with regards to planning of lessons on the part of the teachers in this study. In some cases, teachers even failed to present complete documents that were requested. Some teachers availed very scanty information on how they plan for teaching and learning throughout the year and daily.

It is vital that teachers include all aspects of teaching and learning that would sustain their teaching programme during the planning stage. Documents should clearly state the approaches and expected learning outcomes from each approach chosen. Documents such as schemes of work, weekly forecasts and daily routines, lesson plans and records of work should all contain information on what kind of teaching approaches one plans to use in the year, term, week and day including expected learning outcomes. Figure 5.20 shows an ATLAS.ti 23 visualisation which speaks to challenges related to learning outcomes.



**Figure 5.20: An ad hoc network of challenges from some games**

*Source: G.M Mwinsa*

The document analysis revealed that learners had challenges with some games that teachers used in the lesson. Such information is vital for recording in order to make improvements on best practices and help learners acquire the needed skills. It would also be cardinal for documents used by teachers to anticipate challenges and ways of resolving limitations that might be incurred during the implementation process.

The next section deals with mitigating measures that teachers can use when planning to use indigenous games in lessons for preschool learners.

#### *5.4.6.8 Theme 4 – Intervention measures teachers use to deal with challenges*

A final recurring theme that emerged from document analysis is intervention measures teachers use to deal with challenges. Participants shared their views on strategies or mechanisms that they put in place in order to teach emergent literacy and numeracy with fewer difficulties. From this theme, one subtheme emerged, mitigating measures. I discuss this sub-theme below.

##### *5.4.6.8.1 Sub-theme 1: Mitigating measures*

One sub-theme emerged from Theme 4 of document analysis. This sub-theme mitigating measures. The documents analysed in this study presented several challenges that teachers face as shown in the discussions above. However, the means of resolving the challenges that teachers were facing were not documented. It is vital that the challenges faced are resolved by finding ways of minimizing the inadequacies noticed in the documents used by teachers. This can be done by providing ECE teachers teaching in public schools with regular and specific CPDs to train them on how to write schemes of work, daily routines, lesson plans and records of work. This would help teachers to capture necessary and appropriate teaching methods that bring better learning outcomes to learners.

Planning lessons with appropriate teaching methods is one thing while implementing what is planned is another. Teachers need to be oriented and reoriented on how to plan lessons with desired goals that are achievable. This can be done through regular workshops and CPDs on lesson planning and execution of planned lessons. The planned lessons should be accompanied by activities that are easy to follow by the learners. This would enable teaching and learning to be more focused on desired learning outcomes that respond to curricula and societal needs.

Another important aspect that required serious focusing was the production of teaching aids. The teaching aids that learners find useful and friendly are those that are produced from locally available materials. Teachers in this study were encouraged to find materials that are local and use such materials in lesson delivery.

This enabled learners to respond more enthusiastically as they were aware of such materials from their homes. The teachers also found teaching more easily as learners easily grasped the intended aspect of the lesson. Teachers were therefore encouraged to take the production of appropriate teaching materials more seriously as it affects the learning trajectory of learners. This makes the production of teaching and learning materials very vital for any meaningful learning to take place in early childhood classes. Overall, the learning process that uses traditional games as an approach in preschools would lead to holistic child development.

## **5.5 SUMMARY OF MAJOR RESEARCH FINDINGS**

The primary goal of this study was to investigate the role that indigenous games play in enhancing early learning among preschool learners in Chibombo District of Central Province in Zambia. The focus was to ascertain whether the use of indigenous games could enhance the acquisition of emergent literacy and numeracy skills in preschool learners. The findings of this study suggest that teachers in ECE appreciate the need to use traditional games in teaching. Most of teachers had the eagerness to use traditional games but they faced challenges in using individual games appropriately. Overall, the traditional games used during the research well found to be supporting early learning as learners exhibited enthusiasm throughout play-based activities that teachers applied. The current findings suggest that learning in preschools should be largely play-based in order for learners to acquire literacy and numeracy skills leading to holistic child development.

## **5.6 CHAPTER SUMMARY**

In this chapter, I have presented the findings and interpretations of this research study. The chapter has presented findings using data that was obtained from the field as a data presentation framework. The chapter has presented findings from data obtained through individual interviews, classroom observations, focus group discussions and document analysis from teacher participants in the research site. Data was presented through four emerging themes and their numerous sub-themes. All presentations of findings used themes and sub-themes as well as issues that were raised by the participants during the research study. The final chapter, provides discussion of findings, conclusions and recommendations of this study.

## **CHAPTER 6 : DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 INTRODUCTION**

In the previous chapter, I presented the findings and interpretations of this research study. This chapter deals with the discussion of findings, conclusions and recommendations of the study. It begins with a discussion of findings in the context of a theoretical framework. It further moves to deal with a discussion of how the findings agree with or challenge the previous studies. Furthermore, the chapter covers conclusions that the study has made from the findings, theory and related relevant literature. The chapter also provides recommendations as well as developing a framework that teachers can use when teaching emergent literacy and numeracy to preschool learners by using indigenous games as a pedagogical approach. The chapter closes with final concluding remarks.

### **6.2 DISCUSSION OF THE FINDINGS IN THE CONTEXT OF THE THEORETICAL FRAMEWORK**

This section discusses the findings of the study in the context of the theories that this study was anchored on.

#### **6.2.1 Theoretical framework**

A theoretical framework as shown in Section 3.1.1 is a design that supports a specific field of study. It is therefore vital that researchers appreciate the significance of selecting an appropriate theoretical framework that explains why certain decisions are made in a study. Mensah *et al.* (2020) argue that a theoretical framework is vital in scientific studies because it offers a significant basis of the study into acceptance of theoretical constructs. Grant and Osanloo (2014) also add that any research studies, especially at higher levels of study should be anchored on a theoretical framework that brings value to the research field.

##### *6.2.1.1 IKS, Jean Piaget's theory of play and Lev Vygotsky's sociocultural theory*

This study was guided by three theories that were found to be appropriate, namely, IKS, Piaget's theory of play and Vygotsky's sociocultural theory. IKS was chosen because it argues that learners acquire needed skills better and faster when

teaching and learning approaches use and apply indigenous or traditional knowledge that learners are familiar with in their local communities (see Section 3.2.1). This theory was appropriate, as it helped me to find out how preschool teachers used traditional games in lesson delivery.

Jean Piaget's theory of play in Section 3.3.1 argues that children are active learners and not inactive participants in the learning process. Scholars in Section 3.3.1.1 argued that school environments that are constructed with play facilities are in themselves a motivation for learners to attend classes daily. Devi (2019) adds that classrooms are built with a view to allow learners to construct and co-construct their own learning, including helping them discover new ideas (see section 3.3.1). As suggested earlier in Section 3.3.2.2, Piaget also strongly argued that children learn through mimicking others and transform the imitated ideas or actions into symbolic behaviour. Teachers therefore play the role of scaffolding in classrooms that provide free play and fit-for-purpose teaching and learning atmosphere (see Section 3.3.2.2).

The sociocultural theory by Lev Vygotsky in Section 3.4.1 was of fundamental significance in this study because it encourages active play in learners, supported by skilled teachers in order to support learning. This theory encourages creating an atmosphere that is motivating for the learners. The school environment should be interactive in nature with teachers who can plan lessons that have playful activities that teachers include in their planned lessons daily (see Section 3.4.1.1). Therefore, learners in classrooms therefore need to be fully engaged in social interaction and creative play for cognitive development to take place. This brings to the fore the importance of the zone of proximal development and scaffolding that are known to support learners in managing school tasks either independently or with others as suggested in Section 3.4.1.1.

The three theories worked as complementary frameworks rather than contradictory ones. IKS was important as it helped both teachers and learners to navigate through lessons by using familiar, low-cost and local games in teaching and learning with little struggle. At the same time, Piaget's theory of play showed that teachers can be scaffolders in lessons that children participate in actively especially when the activities are familiar to the learners. The same is true of Vygotsky's sociocultural

theory that encourages learners to engage in social interaction with both their peers and teachers in supporting cognitive development. I now shift my attention to discussing the findings of this study in relation to the theoretical underpinnings of this study in the next section.

### **6.2.2 Findings in the context of IKS, Piaget’s theory of play and Vygotsky’s sociocultural theory**

This section discusses the findings of the study by contextualising them with the theoretical framework. The discussions cover key findings that relate to indigenous knowledge systems, Jean Piaget’s theory of play and Lev Vygotsky’s sociocultural theory. The discussion deals with selected findings on the role of indigenous games in enhancing early learning among preschool learners in Chibombo District, Central Province, Zambia. It is vital to state from the outset that all the findings in this study relate to IKS, as the study investigates the role of indigenous games in enhancing early learning in preschool learners. However, I have chosen only the ones that respond to the four major themes that emerged from the findings.

#### *6.2.2.1 Indigenous games used in teaching literacy and numeracy*

The findings of this study show a very strong link between theory and data from the participants. As shown in Section 3.2.1, IKS argues that people residing in a specific community see themselves in a certain way and make use of the environment to improve their livelihoods. According to Wadende et al. (2016) in Section 3.2.1, IKS adds value to teaching and learning in elementary schools most importantly for schools in rural areas and low-income communities in urban areas. In this study, participants identified games such as *nsolo* and *wider* for mathematical concepts like counting, adding, subtraction and division, *pada* for imagination, memorising and measurements, and *chiyato or chiyenga* for addition and subtraction, as shown in Section 5.4.3.1.1. This is consistent to what Ejuu (2019), Lungu and Matafwali (2020b), Nxumalo and Mncube (2019), and Tachie and Galawe (2021) theorise those games when applied in teaching subjects such as mathematics, literacy to ECE learners, bring about child development in all developmental domains.

Traditional stories such as the ones presented in Section 5.4.3.1.2.2 shows that stories have a long-standing history of being used in schools or teaching to teach

learners various aspects of the community that they grow up in. The stories also teach cultural values and help learners and the community to live in harmony. This is vital, as it relates very well with Lev Vygotsky's sociocultural theory in Section 3.4.1.1 that posits that culture, social experiences and zonal of proximal development are key to teaching and learning in preschool learners. The community therefore plays the role of being teachers and ensures that children learn values, morals and norms that are vital for survival in society. The teaching in this theory also requires that what is taught is age-appropriate for each level of education and resonates with needed learning outcomes so that what was observed in Section 5.4.5.1 is avoided.

Section 5.4.4.1 presented findings on games that teachers use to teach emergent literacy and numeracy skills using playful pedagogy. Figures 5.13 and 5.14 showed vividly that play brings about better learning outcomes in children when it is properly applied. Some of the outcomes showed that learners were able to acquire receptive and expressive language, and counting skills, memory was improved, and attention span was also prolonged. This is related to what Piaget's theory of play in Section 3.3.2.2 postulates on the use of play in teaching and learning of young learners, especially at preschool level. The theory argues that children can imitate adults and mimic their activities (Munsaka & Kalinde, 2017). This is true of traditional games when play becomes the centre of teaching and learning.

#### *6.2.2.2 Indigenous games as a pedagogical approach for emergent literacy and numeracy skills*

Indigenous or traditional games were found to be very vital in teaching and learning of preschool learning. The teaching and learning approaches identified were play-based and creative approaches, as shown in Section 5.4.3.2.1. Participants indicated that they enjoyed working with children in a creative and play-based manner (see Section 5.4.3.2.1). IKS, Piaget's theory of play and Vygotsky's sociocultural theory support creativity and play-based teaching and learning. Participants in this study indicated that play and teaching cannot be separated from the teaching process of preschool learners (see Section 5.4.3.2.1.2). This is similar to what Ejuu (2019) and Ogunyemi and Henning (2020), both proponents of IKS, argue that teaching and learning in preschools should be combined with play in order



to have effective achievement of learning outcomes such as the acquisition of skills related to expressive and receptive language including counting, matching and numbering skills.

Piaget and Vygotsky also suggest that teaching and learning should be complemented by activities that have play in them. Such activities should emanate from the community and must be familiar to both the teachers and learners. This is because learners learn faster and quicker when they imitate adults, socialise with peers and the learning process is planned in an appropriate manner for each ZPD level of a child (see Sections 3.3.1 & 3.4.1). The two theories are in line with the findings of this study shown in Section 5.4.3.1.1 and 5.4.3.1.2. All participants were of the view that teaching and learning in preschools are heavily reliant on play and as such, all activities in preschools must be creative and play-based in nature.

#### *6.2.2.3 Challenges teachers face when using traditional games*

Teaching preschool learners comes with several challenges as has been shown in Sections 5.4.3.3, 5.4.4.3, 5.4.5.4 and 5.4.6.3. The challenges from the participants were similar and related to classroom and outdoor challenges, age of learners, over enrolment, pedagogical limitations, a lack of knowledge and skills, and a lack of creativity, innovation and resources (see Section 5.4.3.3). In all the instruments used to collect data, these challenges or limitations cut across and were very pronounced, especially during interviews and focus group discussions. This is consistent with what Madondo and Tsikira (2022) and Wadende et al. (2016) suggest in Section 3.2.1. The authors argue that most schools have limitations or challenges such as the ones found in this study. However, the answer or response to the gaps in most education systems worldwide is IKS which uses traditional games that are local, familiar and low-cost to the community where learners come from (section 3.2.2.1).

Hafina et al. (2022) in Section 3.2.1 also postulated that the schools in Indonesia were found to have a lot of scarcity of teaching and learning materials due to over-reliance on western teaching and learning materials. This is similar to what the findings of this study showed that most of the challenges faced in schools, especially the pedagogical limitations, were a result of a lack of knowledge of traditional games

and a lack of creativity, and resourcefulness among the teachers (see Sections 5.4.3.3.4, 5.4.3.3.5 & 5.4.3.3.6).

In terms of challenges with classroom and outdoor spaces, the findings in study in Section 5.4.3.3.1 showed that classrooms were inadequate, over-enrolled, a limited number of teachers, a lack of materials and insufficient space for play. This made it difficult for teachers to teach effectively and achieve their planned learning outcomes for the lesson. This finding is in line with what Pramling *et al.* (2019) in Section 3.3.2.2 argued that classroom spaces and outdoor learning environments needed to have enough space for a variety of activities to take place. This theorisation is in line with Piaget's idea that no learning can take place in an environment that supports playful activities in preschool classes (Bhagat *et al.*, 2018; Pramling *et al.*, 2019).

Lev Vygotsky's sociocultural theory in Section 3.4.1.1 posits that group interface and creative play are a cornerstone to holistic child development in ECE learners. For this important aspect of child development to take place, teachers in this study indicated that they needed classroom spaces that are adequate and spacious, enrolments that are normal and innovation in use of games (see Section 5.4.3.3.3). The environment, therefore, or learning spaces must have facilities that allow the use of traditional games for the purposes of constructing knowledge by preschool learners (see Section 3.4.1.1).

#### *6.2.2.4 Intervention measures teachers can use when faced with challenges*

The findings in the study also dealt with ways of improving teaching skills for emergent literacy and numeracy in preschools. This was as result of challenges schools faced with regards to supporting the acquisition of emergent literacy and numeracy skills in ECE centres of the research site. The findings in Section 5.4.3.4.1 discuss the strategies that teachers use to improve the teaching of emergent literacy and numeracy. According to the participants in Section 5.4.3.4.1.1, teachers endeavour to manage the challenge of large class sizes by dividing learners into small groups and assigning them different tasks supported by either a competent peer or the teacher. This is in line with Jean Piaget's theory of play in Section 3.3.2.2 which says that children learn from adults or significant others in a playful manner. The same is true of Lev Vygotsky's sociocultural theory in Section 3.4.1.1 which

suggests that adults play a role in helping learners acquire skills that the community desires children to learn. IKS also supports the argument by insisting that adult members of society are responsible for the transmission of knowledge and skills to all children through playful tasks and activities (Wadende et al., 2016).

Teachers in Section 5.4.3.4.1.2 indicated that it was very vital for each one of them to remain creative, including being resourceful for them to be effective at teaching preschool learners. This called for each teacher to be able to see areas of improvement that he or she could use in improving the performance of learners. Lev Vygotsky's sociocultural theory in Section 3.4.1.1 supports this aspect by showing that teachers must be creative for them to play the role of scaffolders in the lessons that use traditional approaches. Jean Piaget's theory of play in Section 3.3.2.2 also suggests that for play-based teaching and learning to take place, creativity, and resourcefulness in teachers are very vital (Parker et al., 2022). Nxumalo and Mncube (2019) concretise it by indicating that teachers who are innovative are more likely to achieve the desired learning outcomes such as counting, numbers, reading and writing in their learners. The findings in this study therefore resonate well with the theories that were adopted and show that learning through play is the best approach preschool teachers can use to teach ECE learners effectively. The next section discusses the findings of this study in relation to previous research.

### **6.3 FINDINGS IN RELATION TO PREVIOUS RESEARCH**

This study investigated the role that indigenous games play in enhancing early learning in preschool learners. This section synthesises the findings presented in Chapter Five in relation to relevant literature presented in Chapter Two of this thesis. The findings presented had four themes that emerged from the data and were related to the research questions and objectives of the study, as shown in Section 5.4.2. The discussions of findings are captured through the following themes that emerged from the study:

- Indigenous games preschool teachers use in teaching emergent literacy and numeracy skills,
- Indigenous games as a pedagogical approach for teaching emergent literacy and numeracy,

- Challenges teachers face when using indigenous games in teaching, an
- Intervention measures teachers can use to deal with challenges faced.

### **6.3.1 Indigenous games that promote the development of emergent literacy and numeracy skills in preschool learners**

The data from the field brought out findings that responded to indigenous games that teachers use to promote the development of emergent literacy and numeracy skills in preschool learners. The findings of this research question are discussed through two sub-themes, namely, indigenous games for emergent literacy skills and indigenous games for numeracy skills development.

#### *6.3.1.1 Indigenous games for emergent literacy skills*

Interviews, focus group discussions, observations and document analysis raised several pertinent issues with regards to games that teachers used when teaching emergent literacy skills to preschool learners. The games that teachers used to teach emergent literacy skills to learners were *sound or lengu game*, *umulilo kulupili*, *race game*, and *traditional stories*. The game of *lengu*, for instance, was said to be a sound game that uses songs to teaching literacy and numeracy in preschool learners. In this study, the teachers stated that several local or traditional games were included in their lesson plans for each specific lesson with songs. However, the study further revealed that some teachers were observed to lean more towards the use of Western games and songs in teaching, as they were unfamiliar with some of the traditional games, as suggested by Madondo and Tsikira (2022), and Mloi *et al* (2021) who found teachers in rural Zimbabwe and South Africa, respectively, favouring Western games than indigenous games due to a lack of knowledge and skills in these games. Similar songs were found to be consistent with the ones stated in Section 2.3.1 by Munsaka and Kalinde (2017) and Matafwali and Mofu (2023) in Zambian schools known to promoting the acquisition of emergent literacy skills such as expressive and receptive language.

Traditional songs used included songs for the alphabet for literacy lessons, as shown in Section 2.3.1. The findings showed that teachers use a combination of traditional and Western songs to teach certain literacy skills such as sounds, phonics,

phonology and the development of vocabulary in young learners. This is consistent with Ejuu (2019) and Lungu and Matafwali (2020b), whose study presented in sections 2.3.1.1 and 2.4, shows that songs and games that are local to a particular area can be used to teach word sequencing, sentence construction, sounds, vocabulary and reading skills among others.

Traditional stories also play a vital role in improving literacy levels for children in pre-primary and primary schools (see Section 2.3.1.2). Acquiring emergent literacy skills for learners in preschool is very significant as all learning that takes place in schools after preschool involves reading, writing, speaking and arithmetic awareness (see Section 2.3.1.1). The findings suggested that all teachers used a play-based approach and stories when teaching literacy skills such as speech development, vocabulary and expressive language including listening and speaking. However, some teachers had difficulties in selecting appropriate games and stories for specific topics, softening making spontaneous decisions during the lesson which did not yield the desired results. This approach is supported by Munsaka and Kalinde (2017) in Section 2.3.1.1 who contend that teachers should endeavour to use appropriate games when teaching specific skills such as sounds, reading and speaking.

The *race game* was another game that teachers used, as shown in Section 5.4.3.1.2.3 of this thesis. The findings revealed that teachers used this game to help learners acquire skills of associating correct sounds to letters of the alphabet and objects in homes and classroom. The finding is consistent with Ejuu (2019) and Kejo (2017) whose studies illuminated very important ways of teaching sounds, associating letters with familiar objects and encouraging learners to pronounce words and items accurately. However, limitations in some teachers existed as they struggled to use the game appropriately making the whole activity merely for fun. The other *race game* teachers used was similar to the *relay race* by runners in a race. The findings revealed that teachers used the race game to enhance their ability to make appropriate sounds of letters and the pronunciation of words. This finding is consistent with games stated by Parker et al. (2022) in Section 2.3.1.1 that were used to promote the acquisition of letter and word awareness in preschool learners. The results of such games are insurmountable, as they lead to learners being able to read, write and speak fluently.

The game of nyenyeezi (star) was also found to be used by teachers for role play and dramatic play, key games that support the development of emergent literacy in preschool learners. The findings of the study show that learners enjoy games that are dramatic in nature, such as nyenyeezi. In line with these findings, Parker et al. (2022) also found role play and dramatic play games to having a significant impact on the teaching of literacy skills to ECE learners. The results of this study also showed that if used appropriately, learners could improve their memory retention span which is consistent with findings in Ejuu's (2019) study which found that children in Uganda had significant improvement in their cognitive skills due to the use of traditional games. The findings support the existing literature in relation to indigenous games for emergent literacy skills. Schools seemed to enjoy using traditional games, however, some schools still use Western and traditional games and songs in teaching, as they were unfamiliar with some of the traditional games.

#### *6.3.1.2 Indigenous games for numeracy skills*

The findings revealed that teachers identified several traditional games that they used to teach numeracy skills to their learners. The results indicated that teachers identified traditional games such as nsolo, wider, pada, chiyato or chiyenga, kankuluwele, bus game and nyenyeezi to teach numeracy skills such as counting, numbers, memory and matching skills to preschool learners. Games such as nsolo, wider, pada and chiyato or chiyenga were identified as useful in teaching numeracy skills such as counting, numbers, seriation, memorising of number and measurements. This was consistent with Madondo and Tsikira (2022) in Section 2.1.2.2 who found that teachers used *tsoro* to teach similar numeracy skills to preschool learners in rural Zimbabwe through guided and free play. The same was true of the findings by Matafwali and Mofu (2023) in Section 2.2.2.4 who found that nsolo was one of the games that was seen to be useful in teaching various skills to ECE learners in Copperbelt Province of Zambia. Nsolo and wider games are said to be the most popular games that teachers use in preschools to teach numeracy skills (see Section 2.3.2).

Previous studies have shown that the games of *nsolo and wider* are more appropriate to reception children and those who are slightly older such as early

grades in primary (see Sections 2.2.1 & 2.2.2.4) than middle-class learners. The results in this study indicated that nsolo and wider games were largely useful for children in reception due to the high level of physical agility that is required in learners. Moloji *et al.* (2021) used a similar game called *Kgati* to teach mathematical concepts to lower primary learners in rural South Africa and obtained better learning outcomes. Section 2.1.2.3 shows that Madondo and Tsikira (2022) equally used the game of tsoro as an early game in ECD and primary schools of rural Zimbabwe and had wonderful learning outcomes from the learners. Moloji *et al.* (2021) also used a similar game to teach mathematics to lower primary learners in South African schools (see Section 2.3.2.1), a situation which shows that these games bring out better educational outcomes when used on older learners than those who are three years old or younger. The findings of this study showed that younger learners in middle class did not comprehend the rules and follow them closely during the use of *chiyato/chiyenga*. The children were not enthusiastic about the game, as it proved to be challenging to the learners in the middle class who were less than 4 years. This is consistent with findings from Ejuu (2019), Madondo and Tsikira (2022) and Moloji *et al.* (2021) whose studies suggest that certain games are more appropriate to older learners than younger ones due to the complexity of rules and procedures.

The game of *pada* was also found to be vital in teaching numbers and counting skills to preschool learners by teachers in this study. Teachers indicated that they used this game to teach mathematical skills to learners. The findings are in line with Tachie and Galawe (2021), whose findings as stated in Section 2.3.2.1 who also found that games of *pada* helps teachers to teach numeracy skills such as counting, numbers, imagination, memorising and measurements in mathematics. This was also similar to the games used by Madondo and Tsikira (2022), Matafwali and Mofu (2023), and Moloji *et al.* (2021) in teaching mathematical skills in rural South African, Zambian and Zimbabwean preschool learners. The game of *pada* was of great potential for teaching of mathematics to learners in reception, including lower primary school grades, as shown by Munsaka and Kalinde (2017) in Section 23.2. Since children love playing, Matafwali and Mofu (2023) in Section 2.2.1.2 argued that ECE teachers should endeavour to use traditional games such as *pada* to teach their learners various skills and also sustain attention span during lessons as was

observed during lessons that applied play-based teaching approaches during this study.

Chiyato or chiyenga have equally been used to teach numeracy skills for many years in pre-primary and primary schools (see Section 2.2.1). In many countries, the games are called differently, and the rules of play might differ. The game of *chiyato* or *chiyenga* in Zambia has different names in other countries, including “*Ondota* in Namibia, *mdako* in Tanzania and *gittey* in Parkistan” (Matafwali & Mofu, 2023, p. 392). The game focuses on the development of mathematical concepts in learners as shown in Section 2.3.1.1 When participants were asked to explain if they used *chiyato* or *chiyenga* in enhancing the acquisition of counting and number skills in preschool learners, the responses from them portrayed that teachers prefer to use this game in schools. The results of this study indicated that *chiyato* or *chiyenga* was preferred to be used in teaching addition and subtraction in young learners, which was similar to what Munsaka and Kalinde (2017) in Section 2.2.1 found that using games such as *chiyato* would enhance the acquisition of mathematical skills. The findings of this study also revealed that most of the teachers had an idea on how to use *chiyato* or *chiyenga* to teach specific numeracy skills such as counting, measuring, addition, subtraction and division. However, the results further indicated that teachers lacked skills on how best to plan for specific topics in the curriculum as discovered by Nakawa (2020) in Section 2.3.2.1 who found that teachers in Zambian schools lacked knowledge and skills in applying traditional games when teaching mathematics.

*Kambeba* game was another traditional game that was played by forming a circle in a large play area such as a playground as shown in Section 5.4.3.4.1.1 of this thesis. This game was also found to be useful in teaching numeracy skills to preschool learners. This finding is related to the study by Moloji *et al.* (2021) in Section 2.2.2.4 who found that similar traditional games taught vital mathematical skills such as counting and seriation. The participants agreed that teaching and learning in preschools needed to be fashioned in a more playful manner and using locally available materials/resources. The views of the participants agree with Tachie and Galawe (2021), whose findings show that the most effective ways of teaching ECE



learners are through the use of locally available materials and local games through playful approaches.

Considering the previous debate, this study's findings about indigenous games and their effect on numeracy abilities are consistent with previous research. In particular, the conclusion suggests that while games like chiyato may be challenging for younger learners in medium-class settings, games like nsolo and wider are more suited for reception learners and somewhat older learners. It has been determined that pada is an essential game for teaching counting to students at all levels, from middle class to reception and lower elementary school classes. The study also revealed that it is crucial to use readily available resources and materials in the community when using playful teaching and learning strategies in preschools.

### **6.3.2 Pedagogical approaches used to teach emergent literacy and numeracy skills**

Traditional games remain significant in teaching and learning of emergent literacy and numeracy skills in young learners such as those at pre-primary level. The pedagogical approaches used by teachers in ensuring that their learners acquire the necessary emergent literacy and numeracy skills need serious thought when one is making a choice (see Section 2.3.2.2). When participants in this study were asked to explain how they use some traditional games in enhancing the acquisition of emergent literacy and numeracy skills such as memory and matching in preschool learners, the responses portrayed that teachers were familiar with and used play-based and creative teaching and learning approaches in their lesson delivery. This section discusses play-based and creative teaching and learning approaches that emerged from the data in relation to previous studies.

#### *6.3.2.1 Play-based and creative teaching approaches*

Play-based and creative teaching and learning have continued to be a cornerstone of teaching and learning in ECE centres around the world (see Section 2.2.1). Participants in this study explained that “*play-based learning is a type of learning that uses play as a method of delivering lessons, with different games so that every*

*learner can participate*". The findings revealed that traditional games fitted well with play-based and creative teaching approaches as these supported the acquisition of very relevant skills that learners in ECE require in school and life in general. The skills learnt include counting and matching skills. In addition, skills such as adding, subtraction and direction are also acquired in this game as learners add or subtract those caught from the ones who are safe in the circle. These skills are very vital, as suggested by Lungu and Matafwali (2020) in Section 2.2.2, and Parker et al. (2022) in Section 2.2.1, who found that play-based teaching approach brought significant results that led to the development of vital skills in preschool learners.

The findings from the data revealed that teachers prefer to use learning through play, a play-based teaching approach, as a teaching approach for emergent literacy and mathematics. However, significant challenges were observed that showed that teachers lacked knowledge and skills in using play-based teaching approaches such as learning through play. Participants insisted that teachers were required to endeavour to incorporate play in the lessons for each day. The findings showed that teachers could not separate play from the teaching process of ECE learners because young children love playing and as such, they learn through play. This is against the requirement in the school curriculum for the Ministry of Education that separates play from teaching and learning, as 40% of teaching and learning, while 60% is reserved for playful activities (MESVTEE, 2013/2014; Nakawa, 2020). Nakawa (2020) in section 2.3.2 agrees with the findings in this study that teaching and learning in ECE cannot be separated from play as the two are conjoined twins. Data from the study revealed that teachers found it easier to teach through an integrated lesson that combines play and teaching, rather than following the recommended teaching structure from the Ministry of Education that uses standalone subject lessons (see MESVTEE, 2013/2014).

Participants stated that they "enjoyed working with learners using games to teach emergent literacy and numeracy skills" unlike using more conventional methods of pedagogy to preschool learners. Traditional games with songs were found to be the most frequently used as they taught both sounds and counting in learners. The fishing game, for example, illustrated the importance of games, especially the locally

known games in teaching literacy skills such as reading, sounds and sentence construction. This is consistent to what scholars found in Section 2.4.

Stories were also found to play a vital role in improving emergent literacy and numeracy levels for children in pre-primary using a creative teaching approach. The findings of the study revealed that ECE learners could not learn without using play in the teaching approach. Learning through play therefore took centre stage in approaches suggested by teachers and a great emphasis on using local games was also learnt from the participants. Nakawa (2020) and Parker et al. (2022) in Section 2.3.2.1 found similar results when stories, games and songs were used in teaching preschool learners in the studies they conducted.

Teachers further stated that they made it a point that all learners were paying attention to stories as they taught sounds that are very cardinal for the development of expressive and receptive language in preschool learners. Other playful activities were games such as lengu, nyenyeezi, nsolo, wider and pada among others that teachers used to teach emergent literacy and numeracy skills. The game of wider, for instance, was largely associated with songs during the play and it involved jumping over a rope which led to learners acquiring skills in sounds, phrasing of sentences, counting, and numbers, and gross and fine motor skills, as suggested by scholars in Section 2.4. The games are known to also improve word recognition, sounds, vocabulary and sentence construction, as suggested by Ejuu (2019) in Section 2.2.5. Teachers were struggling to control learner learners as the enrolment levels were too high and difficult to maintain. Teachers were caught in a situation of either being an educator or a disciplinarian. In most cases, learners were not supervised nor observed in activities as teachers were overwhelmed with a high number of learners.

The study found that teachers acknowledged the efficacy of conducting continuous professional development activities (CPDs) in order to improve skills in teachers on play-based and creative teaching approaches. CPDs were recognised as catalysts for creativity, innovation and resourcefulness in ECE teachers in their lesson planning and delivery approaches. However, during the study, no such activities were conducted by the teachers, which posed a limitation on making conclusions

about the usefulness of CPDs in the research site. This is why Kemmis et al. (2014) and Parker et al. (2022) advocated for collaboration among community members and teachers in order to bring about desired learning outcomes in learners. The findings, therefore, stressed the need for teachers to make use of CPDs to produce materials from locally available resources such as bottle tops, sand, clay soil, stones, sticks, wood and wires, as shown in Section 2.2.1 where scholars encouraged the use of locally available materials.

#### *6.3.2.2 Advantages of play-based and creative teaching and learning approaches*

The value of using play-based and creative teaching and learning approaches in preschools cannot be overemphasised. The results from the data revealed that teachers observed benefits for this teaching and learning approach when traditional games were used in teaching preschool learners in a playful manner. Traditional games were found to support preschool learners in exploring fundamental number concepts such as counting, sequencing, number combinations, place values and patterns. The study has also revealed that traditional or indigenous games also increase overall motivation to work with numbers and solve puzzles in life, including promoting of cooperation in life. Mloi *et al.* (2021) and Nakawa (2020) in Section 2.3.2.1 found similar results in their studies, as they noted that children in South Africa and Zambia, respectively, were able to acquire mathematical skills such as adding, subtraction, counting, numbering and seriation when local games were used in the teaching and learning.

The findings revealed that traditional games help in stimulating children's critical thinking, learning of social rules, respect for elders and helping the needy in society. This is in line with what Kejo (2017) in Section 2.2.1 found out that traditional games when used by teachers in preschools led to the acquisition of skills that are useful for the community such as critical thinking and blending in society. Ejuu (2019) in Section 2.2.1 also suggested that traditional games are vital for enhancing the acquisition of cultural values and norms in the society. The findings in this study also resonate with Section 2.2.1 findings that show that traditional games supported the appreciation of cultural values, life skills, self-confidence and discipline in learners. The acquisition of cultural norms and values was said to be pertinent in teaching using indigenous games as shown in Section 2.2.1 showing that traditional games

helped Kenyan learners to appreciate their cultural heritage. The traditional games also were found to support the development of skills such as socialisation and motivation, as suggested in Section 2.4.

Teachers' desire to use traditional games was vital as it signified that they were aware of ways that the said games could promote creativity and innovativeness in children through songs and games. The findings from this study resonate well with the findings by Matafwali and Mofu (2023) in Section 2.2.4 who also agree that traditional games helped build creativity and innovation in preschool learners. The findings also suggest that games also help learners to promote teamwork as children work in groups. This also leads to promoting of ownership in children as they learnt to interact and cooperate with peers in the class tasks assigned by teachers or by themselves (see Section 2.4). Indigenous games were also said to encourage children to work with concrete objects since these add to their permanent understanding of both literacy and numeracy skills as presented in Section 2.2.1.

Overall, the findings show that traditional games were very vital as they were known to help learners improve children's developmental milestones that support the acquisition of literacy skills such as expressive and receptive language. The games equally supported learners in becoming emotionally stable, developing cognitive, social and physical skills as they took part in various traditional games (see Section 2.4). The study also shows that learners learn to cooperate and interact with one another during games. The indigenous games were also found to support the development of emergent literacy and numeracy skills that they can use currently and in other life skills. The local games also supported the development of motor skills in learners as well as the building of positive attitudes towards learning of numbers or mathematical skills as suggested in Sections 2.5 and 2.3.2.1.

### **6.3.3 Challenges teachers face when using indigenous games in teaching**

Another aspect that was presented in chapter five was with regards to challenges teachers faced when using indigenous games in teaching. This section addresses limitations and inadequacies that preschool teachers deal with as they teach learners using traditional games. From the findings, five challenges arose, namely, classroom and outdoor learning spaces, age of learners, pedagogical inadequacies, over

enrolment, a lack of knowledge and skills and a lack of creativity, innovation and resources. Teachers shared information on how they deal with all the challenges stated when teaching emergent literacy and numeracy skills.

#### 6.3.3.1 Class sizes

The findings in this study brought out concerns from participants over several challenges that they face in ensuring that learning takes place in an effective manner. Nakawa (2020) argues that teaching children in Zambian ECE classrooms comes with challenges regardless of the favourable conditions that a teacher or classroom might be experiencing (see Section 2.2.1). Section 2.2.1 shows that the major limitation was inadequate classroom and outdoor learning spaces that hampered the delivery of good early childhood education to learners. The schools in this study were found to have similar challenges with overcrowded classrooms and inadequate learning spaces.

The classrooms in most cases were small and without proper ventilation or room for playful tasks. This is not different from what Mwanza-Kabaghe *et al.* (2015) found in Lusaka schools that were overcrowded and without adequate space for learning through play (see Section 2.2.1). Lungu and Matafwali (2020b) equally found a similar situation in their study as shown in Section 2.2.1. Learners in ECE classrooms that they studied by Lungu and Matafwali (2020b) had inadequate spaces for formative and summative assessment of learners. The findings show that large class sizes compromised the teaching and learning process in most schools. In some schools, teachers were handling over 100 learners for a single teacher. This was found to be extremely challenging for most teachers as a normal class size should have at least 35 learners. In fact, ECE classes are supported to have a minimum of 2 teachers in order to teaching and learning to be effective and efficient.

The findings from the current study show that all participants expressed concern over inadequate learning spaces due to over-enrolment. Some participants brought out sentiments that included failure by learners to participate in the games fully due to class sizes. Some learners were said to be ever distracted as the teacher could not manage to see all the different things learners were doing at once. This is similar

to what Nakawa (2020) found in schools in Zambia which had challenges of teaching certain skills to learners due to a high teacher-pupil ratio, as shown in Section 2.2.1.

### *6.3.3.2 Age of learners*

The age of learners was also a serious limitation or challenge some teachers faced in their classrooms. As argued by Nakawa (2018), the age of learners considerably affects the type of teaching methods that teachers choose to use during their teaching. Teachers in schools that participated in this study had candid views on how the teaching methods used affected the teaching and learning in ECE centres. The findings from the data show that games that teachers plan are required to be age-appropriate.

The findings from interviews and focus group discussions showed that the age of the learners mattered when selecting the type of game to use during lesson delivery. The results from observations of lessons and document analysis revealed different aspects. Not all schools had age-appropriate teaching approaches for planned lessons. The results from the data show that teacher experience, academic qualifications, age of learners and enrolment levels affect the methods one chooses to use, especially when applying learning through play. However, of emphasis was the age of learners that was of serious challenge to effective teaching and learning in schools. This is in line with Moloji (2020) who found that games such as diketo were appropriate for teaching linear functions to older learners as shown in Section 2.3.2.2.

The findings also revealed that some teachers were having difficulties when selecting appropriate teaching methods for use at reception level due to the age of some learners. Some schools were found with a few learners aged eight and nine in the reception class. The age of learners made it difficult for teachers to decide on activities that could be used in the lesson as the older learners found some activities boring while the young learners enjoyed the same games. This therefore requires teachers to be creative and innovative when working with children in preschools as suggested in Section 2.2.2. The findings also revealed that the age of the learners remained vital for the choice of teaching methods that the teachers selected in their lessons.

#### *6.3.3.3 Over enrolment*

Enrolment was another key factor in the pedagogical approaches that teachers decided to use during their lessons in ECE classrooms. According to Munsaka and Kalinde (2017), what teachers decide to use as a teaching approach is also largely dependent on the number of learners in a classroom and the available teaching and learning resources. The findings in this study showed that schools had over-enrolled beyond normal what is manageable. In some cases, teachers had over 70 learners to even 100 in one class. The results showed that enrolment in the classes teachers taught affected the teaching methods that they chose to use in specific lessons. In most cases, teachers were limited to teaching approaches that allowed them to manage big class sizes such as the circle teaching approach than more learner exploratory approaches.

The current study findings have also shown that participants stated that they were having challenges with achieving the planned learning outcomes due to over-enrolment in public schools. The teachers had challenges with managing the safety of the learners due to the overwhelming environment they worked in. It was clear from the findings of this study that teachers in schools had serious challenges when it came to early childhood practice due to enrolment figures. Creativity and innovation of a teacher as shown in Section 2.2.2.4 coupled with enrolment takes centre stage on what a teacher decides to use as a pedagogical approach to a specific lesson as suggested in Section 2.2.2. In this study, participants had a wide range of enrolment numbers across schools and classrooms. Some classrooms had learners over 40 while others had over 100 learners. This posed enormous challenges to the teacher's ability to practice play-based teaching and learning approaches in ECE classrooms.

#### *6.3.3.4 Pedagogical skills*

Pedagogy was found to be another major challenge that arose from the data of this study. The results from interviews, focus group discussions, and observations, including document analysis, revealed that teachers faced difficulties when teaching preschool learners using traditional games. The findings showed that some traditional games were too complex for some learners. It was also discovered that



teachers also had challenges applying some traditional games as they did not know them clearly. It was also learnt that teachers had challenges in developing materials that could be used to teach using certain traditional games. This is in line with Section 2.2.2 which suggests that teachers need to select an appropriate technique as a pedagogical approach for them to be successful in teaching.

Some teachers found it difficult to develop materials that were age-appropriate for specific lessons/topics. This led to failure to achieve the planned and intended learning outcomes for specific lessons by some teachers. The findings from interviews suggested that teachers had difficulties with teaching learners due to a lack of knowledge and skills in the use of specific traditional games for specific lessons. The reason for the lack of knowledge and skills on use of traditional games was found to be lack of training in playful pedagogy during their teacher training, as suggested by Nakawa (2020) in Section 2.3.2.2. The pedagogical challenges were also compounded by inadequate CPD workshops.

#### *6.3.3.5 Lack of knowledge and skills*

The lack of knowledge and skills by ECE teachers in the research site was yet another limitation that arose from the data. A major limitation that arose from the findings was a lack of familiarity with the local games of Chibombo District by some teachers. Participants stated that the traditional games they were familiar with were from another region of the country with varying rules on how they are played. This made the situation a bit difficult to adapt to new local games on the research site. However, the findings also suggested that teachers with proper training in ECE during teacher training were not supposed to have challenges with some traditional games. Data from interviews and focus group discussions revealed that teachers fail to perform well due to poor training background in some colleges of education. The findings in this study also showed that a lack of knowledge on ECE practice was affecting teaching and learning in schools especially when teachers use traditional games. This is consistent with Anders and Rossbach (2015) argument who suggests in Section 2.3.2.2 that some teachers found difficulties in teaching mathematics through games due to personal feelings and attitudes.

#### 6.3.4 Lack of creativity, innovation and resources

Lack of creativity, innovation and resources in ECE teachers and schools was another challenge that teachers faced in the course of teaching. The findings revealed that it was very vital for teachers to be creative, innovative and resourceful in their teaching career if learning was to take place effectively. The participants argued that teachers who are creative, innovative and resourceful find it easy to produce materials that are adequate and appropriate for a specific age group of learners. However, it was discovered that the production of teaching and learning materials was another challenge that teachers in this study were facing like what Nakawa (2020) found in Section 2.3.2.2 as teachers could not be creative or innovative. The findings showed that materials that teachers produce need to look attractive, as learners are motivated when materials are colourful and stimulating. The lack of finances to support the purchasing of materials that can improve the attractiveness of local materials remains a limitation in early childhood practice.

The results of this study have revealed to a great extent that not all teachers trained in ECE have the ability to innovate and develop materials that are age-appropriate and learner-appropriate for each level of ECE taught. Some of the concerns raised by teachers were limiting their ability to deliver appropriate lessons to ECE learners bordering on the need for each teacher to be innovative, creative and resourceful. Teachers in this study further indicated that they knew certain traditional games but had no idea that they could be used to teach literacy and mathematics in their ECE.

#### **6.3.5 The intervention measures that teachers can use to incorporate indigenous games in teaching preschool learners**

The fourth research question that this study endeavoured to answer was the intervention measures that teachers apply in incorporating indigenous games as they teach preschool learners. The findings reveal some convergence and divergence with regards to measures teachers put in place for them to include traditional games in the lessons. For instance, the teachers agreed that they had a role to play in dealing with intervention measures that were required to incorporate indigenous games in the lessons while others believed that it was the duty of the ministry of education to deal with issues such as over-enrolment, class sizes and pedagogical

competencies of teachers. Teachers shared their views on how best ECE practitioners could be assisted to improve their skills in lesson delivery when using traditional games. The matters raised included class size and enrolment, and creative, innovation and resourcefulness. The findings of this study have shown that teachers find means and ways of coping with some challenges that they are faced with in class and in their overall working career as ECE teachers.

#### *6.3.5.1 Teaching and learning spaces*

The results of this study are consistent with those of Madondo and Tsikira (2022) which revealed that class size of learners taught in any school has a significant influence on the strategies one uses to teach ECE learners for better learning outcomes. The findings suggest that teachers can manage large class sizes by dividing learners into smaller groups when assigning tasks. Teachers indicated that in a classroom with more than one teacher, groups can be made in such a way that while one group is writing or tracing or scribbling, the other group is making items using clay, stones, sticks and used boxes. This way, teachers would manage to give feedback to learners who take part in writing or scribbling or drawing or painting on a day that such a learner does these tasks. With time, all learners would acquire some skills in holding a pencil, scribbling, colouring, shading and completing dotted lines which is consistent with findings by Matafwali and Mofu (2023).

With regards to small classroom spaces due to over-enrolment, teachers indicated that there was a possibility of taking children outside for games when the weather was favourable. Teachers who used outdoor learning spaces were found to rarely have difficulties with classroom sizes as they used traditional games in the play grounds that were usually adequate in rural schools. However, little or no learning took place as one teacher could not manage the large enrolments in schools. The findings showed that teachers can make good use of the outdoor learning environment such as a playground for sports as suggested by Ejuu (2019) and Kejo (2017) in Section 2.5 of this thesis. In schools that had inadequate outdoor spaces, teachers used the small front part of the classrooms. The use of small spaces in front of the classroom was however not useful for learners as they were limited in the amount of play. Failure by school authorities to create or secure more space for

outdoor activities hampered the learners' ability to play traditional games to the maximum in order to get the best outcomes.

#### *6.3.5.2 Creative, innovation and resourcefulness*

The findings in this study suggested that it was very vital for each one of the teachers to remain creative and innovative as well as resourceful if they were to manage as ECE teachers. Lungu and Matafwali (2020), Matafwali and Mofu (2023) and Moloji *et al.* (2021) recognised that teachers were required to see areas of improvement that each of them could improve on for learners to performance in lessons when traditional games are used. Some teachers were found to put learners in groups with different tasks checked regularly by the teacher to see areas of need and provide support to those who are struggling. Other teachers found it better to identify a peer who was better than others in managing the rules of a game while the teacher was a scaffolder who ensured that what she had planned in the lesson was being achieved.

The results of this study indicated that ECE centres received inadequate funds for material production. For this reason, teachers improvised or used their own resources to buy items for material production such as pencils, markers and crayons. The findings are consistent with Madondo and Tsikira (2022) who described some teachers as being resourceful thereby improving teaching processes and learning outcomes due to creativity and innovation. The materials teachers improvised were used when making charts, sounds and letter cards, including creating shapes that are used for teaching numeracy skills. The study suggests that teachers work together with each other through CPDs and workshops in order to improve on creativity, innovation and resourcefulness.

### **6.4 IMPLICATIONS OF THE FINDINGS FOR THEORY, POLICY, RESEARCH AND PRACTICE**

This section presents the implications of the findings with regards to theory and practice. The implications are categorised into two: theory and practice.

#### **6.4.1 Implications for theory**

The role of indigenous games in enhancing early learning among preschool learners in Chibombo District of central province in Zambia was conceptualised and contextualised based on indigenous knowledge systems, Piaget's theory of play and Vygotsky's sociocultural theory. The three theories were relevant as they provided an avenue for ECE teachers to work with locally available materials, as well as games and songs to support learner acquisition of emergent literacy and numeracy skills. The theories also showed that through traditional games, ECE teachers could teach learners by encouraging imitation, mimicking adults, use of culture, social experiences and the Zone of Proximal Development in ensuring that holistic child development takes place.

The implication is that early childhood teachers should endeavour to collaborate with one another, with parents, education stakeholders and learners in order to use available knowledge systems to support the acquisition of the much-desired literacy and numeracy skills in learners.

#### **6.4.2 Implications for policy**

The findings have revealed several inadequacies and challenges faced by teachers and preschools regarding the use of indigenous games to enhance early learning in preschool learners. Teachers revealed challenges such as class sizes and over-enrolment, school infrastructure, inadequate and inappropriate outdoor and indoor learning spaces, a lack of knowledge and skills of some local games by teachers, inadequate training on the use of traditional games in teacher training institutions and a lack of community support or engagement affected the effectiveness and efficiency of teachers in the classroom. These challenges also negatively affected the acquisition of literacy and numeracy skills by learners.

In view of the foregoing, education stakeholders and policy makers need to formulate policies and guidelines that would support teachers in incorporating traditional games that are appropriate for the learners' acquisition of emergent literacy and numeracy skills in preschool learners. Teacher training institutions should collaborate

and formulate a standardised teaching curriculum that would include appropriate teaching indigenous games for teaching specific skills such as counting, numbers, reading, speaking and writing to learners in schools.

#### **6.4.3 Implications for research and practice**

This study found that there is a huge disconnection between what teachers said were able to do and what they actually did during lessons. There is therefore a need to conduct participatory action research on teacher competencies and practices in the use of traditional games to teach various subject areas in ECE, including literacy and numeracy. This will enable the ministry of education to have a clear picture of teachers' ability to teach using local games thereby promoting learning through play which has become a cornerstone to teaching and learning in ECE, leading to better learning outcomes in learners. It will also assist teacher training institutions to reorient the training curriculum for ECE teachers and help improve teacher performance and learner achievement.

#### **6.5 CONCLUSIONS**

This study employed an interpretivist paradigm to understand the role that indigenous games play in enhancing early learning among preschool learners in Chibombo District. The study was motivated by my experience as a teacher trainer in ECE at the University. In my visits to schools to observe teachers during school teaching experience or school teaching practice, I noticed the lack of use of traditional games in the lesson delivery of teachers I observed for ECE as well as early grades. I noted with concern the lack of motivation and enthusiasm in learners, as teachers taught ECE classes as though they were teaching upper grades in the primary. I imagined that learners would be more motivated and eager to learn if the type of approach teachers used was playful in nature while using well-known games that are traditional. This led to me conceptualising the study around the role of indigenous games as I felt that indigenous knowledge would be more familiar and of low-cost to both the teachers and learners.

I anchored the study in interpretivism which fits very well with participatory action research design. I worked with teachers and learners in helping learners acquire

skills in emergent literacy and numeracy using traditional games. At the core of this study was Indigenous Knowledge Systems (IKS) in Section 3.2.2.1 suggesting that learning takes place in a more effective way when local games or familiar games and songs are used in teaching preschool learners. In addition, Piaget's theory of play in section 3.3.0 also adds that children learn through play and by imitating others in the environment. This theory also relates to Vygotsky's sociocultural theory in Section 3.4.1.1 that emphasises that culture, social experience and ZPD influence the teaching and learning in schools including ECE.

The main participants in this study were ECE teachers who practice different ways of teaching early childhood learners in public schools. They are known to be the only ones who meet face-to-face with learners and as such were qualified to inform the study on their experiences with regards to learning through play or none, the use of games and in particular use of local games such as traditional games as they were teaching in rural schools. The teachers were also qualified to be participants in this study as they were the ones who assessed learners and had knowledge and information on which teaching approaches worked better for them. They were also able to tell whether a specific learning outcome had been achieved and using what kind of approach for teaching.

The study involved individual face-to-face interviews with teachers. Thereafter, a focus group discussion was held which was followed by lesson observations that were participatory in nature. Document analysis was employed to verify the planning process of teachers and to ascertain the games that were included in the documents used by teachers such as schemes of work, lesson plans, weekly forecasts, daily routines and records of work. I used a thematic data analysis process assisted by ATLAS.ti 23 to code and analyse the data and build themes that I used to present and interpret the findings. Dube and Shawe (2022) in section 4.7.6 argue that data that has gone through rigour during analysis helps the researcher to make more meaningful conclusions by showing how themes and responses relate to previous studies. The next section highlights research questions answered from each of the four research questions of the study.

### **6.5.1 Research questions answered**

The following are the research questions that have been answered that guided this study from inception.

#### **6.5.1.1 *Research sub-question 1: Which indigenous games can promote the development of literacy skills in preschool learners?***

The findings of this study revealed that teachers identified various games that were useful for promoting the development of emergent literacy and numeracy skills. The identified games included nsolo, pada, chiyato or chiyenga, race game, kankuluwele and nyenyeezi which were said to support the development of counting, numbering, rhymes, sounds, vocabulary, receptive and expressive language. Teachers acknowledged the importance of using traditional or indigenous games in teaching of preschool learners even though they were quick to point out the challenges that they faced.

#### **6.5.1.2 *Research sub-question 2: How indigenous games can be used to promote the acquisition of emergent literacy and numeracy skills in preschool learners?***

The second research question revolved around how indigenous games can be used to promote the acquisition of emergent literacy and numeracy skills in preschool learners in Chibombo District, Zambia. The Zambian ECE curriculum has stipulated and documented some games that can be used to teach specific skills to learners. The results from interviews and observations of lessons showed that games were found to be key aspects of teaching and learning in rural schools. However, the teaching approach using traditional games was not well grasped by teachers. Most teachers claimed to use traditional games during interviews and focus group discussions but found it difficult to use the said games during lesson observations. Some participants acknowledged not having known how some games could be used to teach certain mathematical concepts before the project commenced. Teachers had an idea of some traditional games but did not know how to use them as teaching approaches for emergent literacy skills such as building of children's vocabulary and sounds.



All ten participants from the four schools showed great desire and enthusiasm to use indigenous games in teaching preschool learners. Whenever they introduced traditional games in their lessons, learners rose to participate enthusiastically. However, the limitation for most of them was a lack of creativity, innovation and resourcefulness in the production of materials that were age-appropriate. More than half of the teachers had difficulties in selecting appropriate games for specific topics of a lesson. The approaches used by some teachers were not learner-centred thereby not developmentally appropriate for the planned learning outcomes. Teachers, however, lacked the ability to be creative so that they could come up with local games that were similar to the ones stated in the curriculum.

**6.5.1.3 Research sub-question 3: Challenges teachers face when using indigenous games in teaching preschool learners?**

The third research question dealt with challenges teachers face when using indigenous games when teaching preschool learners. The findings and results showed several limitations and inadequacies that preschool teachers face when teaching learners using traditional games were immense. Among them were classroom and outdoor challenges, age of learners, pedagogical challenges, a lack of knowledge and skills and lack of creativity, innovation and resources. The findings also revealed that at least eight teachers from the participating schools struggled with classroom space and outdoor learning areas. Most of the classrooms were small without adequate space for playful activities to take place. The inadequate classroom space was further made difficult by over-enrolment in schools. The over-enrolment further made teachers have pedagogical challenges as they could not manage to create tasks for all the learners in class to participate in. This was also exacerbated by a lack of creativity, innovation and resourcefulness on the part of teachers. It was evident that some teachers were not trained in using traditional games during their teacher training. The lack of knowledge and skills, including inadequacies in innovation in teachers had a negative impact on learning outcomes that could be accrued by learners.

**6.5.1.4 Research sub-question 4:** *What intervention measures can teachers use to incorporate indigenous games in their day-to-day teaching of preschool learners?*

The fourth research question was focused on providing intervention measures that would help teachers incorporate indigenous games in the teaching of preschool learners on a day-to-day basis. The findings show that teachers dealt with class sizes and aspects of creativity, innovation and resourcefulness. The class sizes were dealt with by using the outdoor playgrounds only during the dry season more than the indoor spaces at schools where classrooms were small, and enrolment was high. Teachers used the outdoor area very sparingly due to a lack of creativity and a lack of manpower to help them manage large numbers of learners. The conclusion is that teachers cannot be creative and resourceful during their planning and lesson delivery. It is very difficult to create their own resources to provide materials such as crayons, paints, and markers, hence the need to fund more financial resources to schools.

## **6.6 PROPOSED SIX-STEP FRAMEWORK OF ENHANCING HOLISTIC CHILD DEVELOPMENT USING INDIGENOUS GAMES**

This section presents a six-step framework that this study proposes for Early Childhood Education to support the acquisition of cognitive, emotional, physical and social skills in ECE learners in Zambia.

### **6.6.1 Introduction of the six-step framework**

The six-step framework is a proposed outline of possibilities of improving teacher performance during teaching when using locally available materials and approaches in enhancing early learning in preschool learners. IKS, Jean Piaget's theory of play and Lev Vygotsky's sociocultural theory are critical contributors to teacher competence building in ECE. In this study, I have concluded that learning in rural areas takes place when the teaching approaches and materials used are indigenous to the community and appreciated by all stakeholders despite the limitations and challenges that teachers and learners exhibit for various reasons.

### **6.6.2 Justification for the suggested six-step framework**

The findings in this study revealed inadequacies and significant limitations in the abilities of teachers to use indigenous games appropriately and effectively in

teaching specific topics in ECE. Early childhood teachers, however, portrayed enthusiasm and desire to use traditional games even if it had its own challenges. The inadequacies observed had a negative impact on the effectiveness and efficiency in shaping the lives of learners for the acquisition of the much-needed developmental skills. I am of the view that some of the challenges or limitations stem from a lack of community engagement and parental participation in school activities using indigenous knowledges. Community members and parents have a wealth of knowledge and skills on indigenous games that schools can tap into. For strides to be achieved in this regard, a deliberate policy and programme on teacher training, community engagement and parental involvement needs to be propagated.

For these reasons advanced above, this study proposes a framework that can be used in ECE in order to support teachers and children in teaching and learning of emergent literacy and numeracy skills using indigenous games. The guideline is a six-step framework of enhancing holistic child development using indigenous games. The framework if applied would lead to promoting the acquisition of social, emotional, cognitive and physical skills in ECE learners.

### **6.6.3 Features of the proposed six-step framework**

The proposed six step framework includes the identification of indigenous games, incorporating the games in the curriculum, ensuring teacher training emphasises on indigenous games, building competence in teachers, and engaging the parents and community members, leading to holistic child development. At the centre of the framework is the learner, who becomes the beneficiary of a successful framework for enhancing holistic child development using indigenous games. Figure 6.1 below clarifies this aspect.



**Figure 6.1: Proposed six-step framework for enhancing holistic child development using indigenous games**

*Source: G.M Mwinsa*

### 6.6.3.1 Step 1: Identification of indigenous games

The study found that indigenous games were very vital in teaching and learning of various skills needed by ECE learners. However, some teachers had challenges or limitations on how to play certain local games. In some cases, the learners had the knowledge on how play a certain traditional game, but the teachers did not know the games. In this six-step framework, I suggest that indigenous games such as *nsolo*, *pada*, *waida* or *wider*, *chiyato* or *chiyenga*, *bottle game*, *kankuluwele*, *nyenyeezi* and *mango tainapya* are identified for use in the ECE syllabus. The traditional games suggested in this study, including many others played by children in various parts of the country, should be included in the teacher training curriculum, school curriculum and syllabus for ECE learners. The games would then be useful for play-based teaching and learning, including creative teaching approach which should be taught to all teachers during teacher training. Trainers in institutions of higher learning

should make it a point to ensure that teachers being trained acquire knowledge and skills in using traditional games for various parts of Zambia.

#### *6.6.3.2 Step 2: Incorporation of indigenous games into the teacher training curriculum*

The teacher training curriculum is the fundamental manual that guides what trainers can teach their student teachers. The Zambian Curriculum for ECE has stipulated the teaching approaches that include games, however, there is no deliberate policy or push for the usage of indigenous games in teacher training institutions and early childhood centres. This framework suggests that the ECE curriculum should integrate the identified indigenous games into the training of teachers. The games should be categorised in accordance with the subjects/learning areas or topics embedded in the school syllabus in order to support the acquisition of cognitive, socio-emotional and physical skills in preschool learners. The curriculum should specify the game and the lesson that it can be applied to, including the expected learning outcomes. However, flexibility and innovation should be allowed in order for teachers to select any other local game they might be familiar with to teach aspects of sounds, numbers and counting, expressive and receptive language, social interactions, gross and fine motor skills and aesthetics. This would lead to teachers being creative, innovative and resourceful in their teaching.

#### *6.6.3.3 Step 3: Teacher training, competencies and capabilities*

In this framework, teacher training stands out as a beacon of any success that can be recorded in schools with regards to learners acquiring emergent literacy and numeracy skills. The goal is to ensure that the trained teachers acquire knowledge and skills of different local or traditional games that children play daily. Of course, the games could be differently played in one region to another, but the idea around the game would still be similar and would serve a similar purpose including producing the same learning outcomes. The trainee teachers would be assisted to become creative, and resourceful in their teaching for them to make their lessons lively and enjoyable to the learners. This can only happen if teacher trainers emphasise on using indigenous games in the lessons that teachers prepare to teach.

The indigenous games should therefore be known by the teacher trainers for them to impart similar skills to the trainee teachers. Trainers should use practical activities that would acquaint teachers with knowledge and skills on indigenous games in various communities from lesson planning to delivery. The lecture sessions and demonstrations in teacher training institutions should be practically oriented and focused on ensuring that learners acquire the needed skills that are vital for future learning and development. Applying play-based and creative teaching approaches during teacher training should never be an option, but rather the central part of teaching and learning to support the acquisition of skills such as reading, writing, speaking, counting, seriation, problem solving, concentration in tasks and physical fitness. This would develop learners who would be skilled in various domains, including reading, writing and speaking, that are central in all cognitive, social-emotional, physical and future development trajectories.

#### *6.6.3.4 Step 4: Building competent teachers in usage of indigenous games*

The framework envisages a trained teacher who would be competent in teaching ECE learners using indigenous games. The teacher would have knowledge and skills in developing lessons that include the use of local games and locally available materials in the community. The teacher would also be in a position to adapt to new environments and learn new games with less difficulties. It is expected that well-trained teachers would be creative, and resourceful in their teaching in order to make their lessons enjoyable and stimulating to the learners. The trained teachers should make good use of the community members such as parents and others who act as custodians of culture and traditions in ensuring that traditional games are encouraged at home and in the community.

#### *6.6.3.5 Step 5: Community engagement and parental involvement*

This step shows how community members such as parents and significant others can play a pivotal role in the overall development of children in all developmental domains in preschools.

##### *6.6.3.5.1 Parental workshops*

The framework suggests holding of community trainings and workshops that would support parents' acquisition of knowledge and skills on traditional games. Schools should drive the agenda of organising parent-school activities on the use of traditional games that influence overall child development in ECE. In this way, parents and community members would be encouraged to continue using games to teach skills to their children even when they are home. The parents would therefore be the first teachers as shown by the sociocultural theory which argues that culture, social experiences and ZPD are key in the development of children (Ken-Aminikpo, 2020).

#### *6.6.3.5.2 Community events/activities*

The community are an integral part of the teaching and learning of children at any level of education. In ECE, teachers can make efforts to organise community events such as game festivals, competitions and cultural fairs. The activities or events organised can be of great influence in showing traditional games for children and how each game supports the acquisition of emergent literacy and numeracy skills including social, emotional and physical skills. Since the community members are the custodians of culture and experiences that children go through as they reach each stage of development (Ejuu, 2019; Kejo, 2017), involving them in local games of their locality would be of great benefit to the learners. The parents in the community would be at the forefront of supporting learners through the use of traditional games thereby promoting holistic development in children.

#### *6.6.3.5.3 Step 6: Holistic child/learner development*

The development of children holistically is the desire of every educator or teacher and indeed the entire Ministry of Education. The expected outcomes from teachers who are competent in teaching learners using appropriate indigenous games are enormous. The local games coupled with locally available materials would play a significant role in helping learners learn how to speak loudly, mention sounds of letters appropriately, count, number and measure. The learners are also expected to acquire physical skills during games, especially since most indigenous games involve jumping, running and skipping. In the process of playing games such as wider and kankuluwele, learners would also socialise with the teachers and peers thereby bringing about social and emotional development in learners. Learners taught by competent teachers are expected to acquire social-emotional, physical and cognitive skills leading to holistic child development.

#### **6.6.4 Advantages of using the suggested six-step framework**

There is a belief in the community that only teachers are responsible for teaching children or learners. Contrary to this perspective, the framework challenges it and allocates responsibilities for educating their children. The framework is designed to increase teachers' competence by introducing traditional games into the teacher training curriculum. By doing this, teachers are certain to be knowledgeable about traditional games and skilled in incorporating them into their teaching approaches in an effective manner. A vital aspect of teacher competencies is in the practical training and orientation toward indigenous games. An important component of the framework is the inclusion of community members and parents in the educational process. Parental workshops and community gatherings around traditional games are part of this engagement, which aims to get parents involved in their children's education. The sociocultural theory of child development is in line with this community involvement. The next section deals with recommendations for future research.



## **6.7 RECOMMENDATIONS**

This section discusses recommendations that the study makes from the findings and results of the study. The aim of the study was to investigate the role that indigenous games play in enhancing early learning in preschool learners. The focus was to innovate and mobilise knowledge on how indigenous games can be used to teach emergent literacy and numeracy skills to preschool learners. The desire of the study was to find ways of promoting literacy and numeracy skills using low-cost and locally familiar materials and games in rural schools in Zambia. This study has however made five specific recommendations related to teacher practice, teacher training, and ministry of education, CPDs and teacher employment, including recommendations for future research.

### **6.7.1 Recommendation 1: CPDs and workshops on identification and use of indigenous games by in-service preschool teachers to promote the development of emergent literacy and numeracy skills in ECE learners**

The findings and results from the first research question and theme revealed that teachers identified various games that were known to be useful in promoting the development of emergent literacy and numeracy skills. In as much as teachers were able to identify indigenous games that they could use to teach literacy and numeracy to their learners, the lesson observations revealed that some teachers had challenges making use of games appropriately in specific topics that they were teaching. Rigorous CPD workshops and seminars are for teachers to acquire knowledge and skills that would enable them to use the indigenous games appropriately and efficiently to teach relevant skills to learners in ECE. The indigenous games should also be incorporated in the teacher training curriculum for universities and colleges of education.

### **6.7.2 Recommendation 2: Teacher training programmes, CPDs and workshops on pedagogical approaches for both in-service and pre-service teachers in using indigenous games to teach emergent literacy and numeracy skills to preschool learners**

The study findings indicated that indigenous games or traditional games were said to be key aspects of teaching and learning in rural preschool. It was learnt, however, that most teachers who claimed to use play-based approach when teaching lacked knowledge and skills in using age-appropriate games for specific topics. The Ministry of Education should intensify CPDs and training workshops for all ECE teachers countrywide by engaging competent teachers to train the non-competent ones in order to equip them with knowledge and skills on the use of traditional games teaching emergent literacy and mathematics. Universities and colleges of education involved in the training of ECE teachers should equally incorporate play-based and creative approaches in their training syllabuses as well as ensure that teacher trainers are also equipped with the necessary skillset and knowledge required for effective and efficient teacher training in play-based pedagogical approaches that use traditional games.

### **6.7.3 Recommendation 3: Information sharing by ECE teachers on ways of resolving challenges faced in school**

Findings and results from all ten participants agreed that there were enormous challenges and limitations in teaching ECE learners the bad/inadequate state of classroom and outdoor learning environment, age of learners, pedagogical challenges, a lack of knowledge and skills and a lack of creativity, and resources. It is recommended that ECE teachers engage in information sharing on classroom management, material production, knowledge and skills shaping, and pedagogical approaches appropriate for preschools. This would build a team of teachers with knowledge and skills in early childhood practice.

### **6.7.4 Recommendation 4: Ministry of Education policy guidelines and practices on use of indigenous games, learner enrolment, teacher practice and enforcement of training of teachers, employment and placement of teachers in localities whose local or traditional games are known or familiar to**

The Ministry of Education working with all education stakeholders such as NGOs, teacher training institutions – private and public, provincial education officers, district

education offices and school head teachers should work at providing and implementing policy guidelines that support the use of indigenous games in teaching preschool learners. This should be done by ensuring that teacher training, recruitment, employment, deployment and placement are conducted in such a manner that teachers are posted to work in regions with languages and cultures that they are familiar with or ensure that during teacher training, all teachers are trained in the common traditional games played by children countrywide.

#### **6.7.5 Recommendation 5: Parents, teachers and community members' engagement or collaboration in children's education using indigenous games**

This study was focused on teacher's ability to use indigenous games in promoting the acquisition of emergent literacy and numeracy skills in preschool learners. It is believed that for this to be achieved, parents, teachers and community members should work together in order to promote the cultural games and songs that are useful for teaching of ECE learners. As such, the study suggests that teachers and school administrators should make deliberate plans and activities that include parents and community members with vast knowledge and experience in the use of indigenous games in teaching specific skills to learners in preschool. Such activities could be in the form of cultural expositions, dance and song competitions, school fares and exhibitions, parental visits to schools to assist in material production and showcasing games on mathematics and literacy to learners by parents in schools.

#### **6.7.1 Recommendations for future research**

Interactions with participants during interviews, focus group discussions, observation and document analysis have elucidated aspects that require further studying and interrogation. The findings from this study suggest that the field of early childhood education is still in its infancy stage in Zambia and requires a lot of studies in order to improve practice and learner achievement. The following are recommendations for future research that this study suggests.

1. The ECE curriculum that was introduced in 2014 was a significant milestone in the history of early childhood education in Zambia and had never been

offered in public schools. However, further research should be conducted to ascertain the suitability and appropriateness of the curriculum and applicable teaching and learning approaches that are appropriate for rural, peri-urban and urban schools.

2. The findings also revealed that teachers found it hard to use certain games due to a lack of knowledge of games from specific regions of the country rather than places where they grew up. Studies on indigenisation of the teacher training curriculum in ECE for all trainee teachers would assist to support the learning of traditional games that are played in different localities of the country.
3. The findings revealed a lack of knowledge and skills in teachers on the use of traditional or indigenous games. It would be necessary to carry out a study on capacity-building models for upskilling preschool teachers with current trends in early childhood education practice.
4. The results for this study suggested that teachers had the desire to use traditional games but lacked confidence and skills in selecting appropriate games for specific learning areas such as literacy or numeracy. It would be vital to conduct studies on mentorship and skills development in ECE teachers.
5. Evidence of this study suggests that games (traditional or Western) seem not supported by some members of the community including school administrators and parents as they feel that teachers just like playing with learners. A study on the importance of play in teaching ECE learners in Zambia would be vital as it would help school managers and parents to appreciate the value of learning through play pedagogy in young learners.

## **6.8 CONCLUDING REMARKS**

Notwithstanding the challenges raised in this study on the experiences of teachers on the role that indigenous games play in promoting the acquisition of emergent literacy and numeracy skills in learners, the results suggest that traditional games

are vital for the development of learners holistically. The study has shown that indigenous games when used in teaching preschool learners have many benefits. The findings have revealed that teachers appreciate the use of local games as they are easy to use, inexpensive and familiar to the learners. Even though some teachers found the indigenous games difficult to implement, there was a general view that local games could support the achievement of desired learning outcomes in ECE when used appropriately.

Participants unanimously agreed that indigenous games were very important in the teaching of preschool learners especially in rural areas where Western games and materials were unavailable, unaffordable and unknown to the learners. All participants insisted that all ECE teachers should be trained in the use of traditional games in colleges so that they apply these approaches in their teaching profession. Teachers argued that this study enabled them to learn traditional games that they thought were not useful for teaching some skills to ECE learners. The study was indeed an eye opener for most of the participants who appreciated the value of using indigenous games after they were introduced to them during the research.

## **6.9 THESIS SUMMARY**

Chapter one dealt with introduction and background to the study while the second chapter provided a detailed review of literature. Chapter three delved into the theoretical framework that guided the study while chapter four provided a comprehensive explanation of the methods and techniques that the study used. Chapter five presented findings of the study from interviews, focus group discussion, classroom observations and document analysis. The final chapter of the study has dealt with the discussion of findings, conclusions and recommendations of the study. It began with the discussion of findings in the context of a theoretical framework. The chapter highlighted recommendations for future research and closed with concluding remarks.

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## APPENDICES

### Appendix A Certificate of Ethical Clearance



#### UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2023/05/10

Ref: **2023/05/10/18026877/11/AM**

Dear Mr GM Mwinsa

Name: Mr GM Mwinsa

Student No.:18026877

**Decision:** Ethics Approval from  
2023/05/10 to 2028/05/10

**Researcher(s):** Name: Mr GM Mwinsa  
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**Supervisor(s):** Name: Dr. M. Dagada  
E-mail address: dagadm@unisa.ac.za  
Telephone: 0791699801

**Title of research:**

**The role of indigenous games in enhancing early learning among preschool children in Chibombo District, Central Province, Zambia**

**Qualification:** PhD Early Childhood Development

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2023/05/10 to 2028/05/10.

*The **medium risk** application was reviewed by the Ethics Review Committee on 2023/05/10 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
8. No field work activities may continue after the expiry date **2028/05/10**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

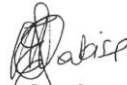
*Note:*

*The reference number **2023/05/10/18026877/11/AM** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,



**Prof AT Motlhabane**  
**CHAIRPERSON: CEDU RERC**  
motlhat@unisa.ac.za



**Prof Mpine Makoe**  
**ACTING EXECUTIVE DEAN**  
qakisme@unisa.ac.za



Approved - decision template – updated 16 Feb 2017

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## Appendix B: Permission to conduct Research from the Government

*If Correspondence should be addressed to  
the District Education Board Secretary  
Call: +260 950 490 270*



REPUBLIC OF ZAMBIA  
**MINISTRY OF EDUCATION**

CHIBOMBO DISTRICT EDUCATION BOARD  
P.O BOX 80246  
KABWE

*In reply please quote*  
DEBCH/101/1/1.....

24<sup>th</sup> March, 2023.

To whom it May Concern

**RE: STAFF INTRODUCTION: MR. GRANT MAPOMA MWINSA**

This serves to introduce to you the above-mentioned Student at University of South Africa, studying a Phd in Early Childhood Education.

We therefore, write to inform you that authority has been granted for the above-mentioned student to carry a research.

The data gathered will be used purely for academic purpose.

Your cooperation and assistance will be greatly appreciated.

A handwritten signature in black ink, appearing to read 'JMB'.

Jack Mbulo  
District Education Standards Officer  
DISTRICT EDUCATION BOARD SECRETARY  
CHIBOMBO

/mimb\*...



## **Appendix C: Participants information sheet**

Date: 15<sup>th</sup> February 2023

Title: **The role of indigenous games in enhancing early learning among preschool children in Chibombo District, Central Province, Zambia**

### **DEAR PROSPECTIVE PARTICIPANT**

My name is **Grant Mapoma Mwinsa** and I am doing research under the supervision of **Dr. Dagada M**, a **Senior lecturer** in the Department of Early Childhood Education towards a PhD in Education (Early Childhood Development) at the University of South Africa. We are inviting you to participate in a study entitled **“The role of indigenous games in enhancing early learning among preschool children in Chibombo District, Central Province, Zambia”**.

### **WHAT IS THE PURPOSE OF THE STUDY?**

This study is expected to collect important information that could be used to mobilise knowledge on the role of indigenous games in enhancing early learning among preschool children for the acquisition of emergent literacy and numeracy skills. Further, the information collected will help in advocating and promoting knowledge of indigenous games in formal early childhood education practice in both urban and rural schools in Zambia.

### **WHY AM I BEING INVITED TO PARTICIPATE?**

You are invited because you are an ECE teacher who has been practicing in this field for at least five years from the time you graduated from University or College. You are also an expert in this field and it is expected that you have immense knowledge which can benefit the field of Early Childhood Education greatly. I obtained your contact details from the Head Teacher of your school. You are among 20 teachers who have been selected to take part in this study.

### **WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?**

The study involves focus group discussion and semi-structured interviews. The study will ask questions such as:

1. Which indigenous games can promote the development of literacy and numeracy skills in preschool learners?
2. How can indigenous games be used to promote the acquisition of literacy and numeracy skills in preschool learners?
3. How can indigenous games enhance the development of cognitive and social skills in preschool learners?
4. To what extent do teachers use indigenous games to influence holistic child development in preschool?

The participation in this study is expected to last over a period of 6 months broken into several short intervals. Observations of the lessons will last an entire day's session such morning or mid-morning or afternoon session depending of the school learning time table at a particular ECE centre. Interviews will be conducted after teaching session is over and it is expected that an interview will last between 1 and half hours to 2 hours. The interview will only be conducted one per participant. In the case of focus group discussion, only one will be organized within the 6 months period and will be agreed upon by the participants. The duration is expected to last 2 to 3 hours.

### **CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?**

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent/assent form. You are free to withdraw at any time and without giving a reason.

### **WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

The study will strive to mobilise knowledge on the role of indigenous games in enhancing early learning among preschool children for the acquisition of emergent literacy and numeracy skills. Further, the study will advocate and promote knowledge of indigenous games in formal early childhood education practice in both urban and rural schools in Zambia. You are very key in this study as you are the experts in teaching early childhood education learners who really need to develop emergent literacy and numeracy skills before they graduate to grade 1. Without your participation, these benefits will not be accrued by the study and the community at large.

### **ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?**

There are no serious risks that you are expected to suffer by virtue of you taking part in this research except on instances that in a focus group discussion, one of your colleagues decides to share the information with other people not part of the research. I will however, endeavor to encourage everyone who will be part of the focus group discussion to maintain high levels of confidentiality.

### **WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?**

You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research as your data will be treated with high level of confidentiality **OR** Your name will not be recorded anywhere and no one will be able to connect you to the answers you give as you will remain anonymous. Your answers will be given a code number, or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings for confidentiality purpose. Only researchers will have access to the data as all transcription will be done by the researcher.

A report of the study will be submitted for publication to the University of South Africa, but your name or identity will never be disclosed in the report. However, it is hard to guarantee confidentiality in focus group discussions. A focus group discussion, or interview, is a form of interview that is conducted in a group, as it brings together participants from a larger social group. This research method allows participants to generate rich data, which they would not have shared during individual interviews. It also allows participants to ask each other questions and to clarify research questions, and it helps the researcher to refocus the objectives of the study. *While every effort will be made by the researcher to ensure that you will not be connected to the information that you share during the focus group, I cannot guarantee that other participants in the focus group will treat information confidentially. I shall, however, encourage all participants to do so. For this reason, I advise you not to disclose personally sensitive information in the focus group.*

### **HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?**

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet at Chalimbana University, place of work for the researcher for future

research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies of interviews, observation notes and focus group discussion notes will be shredded while softcopies will be permanently deleted from the computer.

#### **WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

There will be no payment for participating in this study except for transport refund in case of attending a focus group discussion that will be organized at a central place within Chibombo District as well as provision of meals for such an activity.

#### **HAS THE STUDY RECEIVED ETHICS APPROVAL**

This study has received written approval from the Research Ethics Review Committee of the College of Education Research Ethics Committee, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish.

#### **HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?**

If you would like to be informed of the final research findings, please contact Grant Mapoma Mwinsa on +260979 555 912 or email: [18026877@mylife.unisa.ac.za](mailto:18026877@mylife.unisa.ac.za) or website [www.unisa.ac.za](http://www.unisa.ac.za). The findings are accessible for a period of five years after data collection is concluded and thesis is submitted for examination. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Grant Mapoma Mwinsa, [18026877@mylife.unisa.ac.za](mailto:18026877@mylife.unisa.ac.za), +260979 555 912. Should you have concerns about the way in which the research has been conducted, you may contact my supervisor, Dr. Dagada M, +270791699801, [dagadm@unisa.ac.za](mailto:dagadm@unisa.ac.za).

Thank you for taking time to read this information sheet and for participating in this study.  
Thank you.

\_\_\_\_\_  
(insert signature)

\_\_\_\_\_  
(type your name)

## Appendix D: Teacher consent/assent letter

I, \_\_\_\_\_ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the **interview**.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname (please print) \_\_\_\_\_

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

Researcher's Name & Surname (please print) \_\_\_\_\_

\_\_\_\_\_  
Researcher's signature

\_\_\_\_\_  
Date

## Appendix E: Parent consent/assent for child to participate in the study

I, \_\_\_\_\_ (parent name), confirm that the person asking my consent for my child to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that the participation of my child is voluntary and that he/she is free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that the participation of my child will be kept confidential unless otherwise specified.

I agree to the recording of the **observations**.

I have received a signed copy of the consent/assent form agreement.

Parent Name & Surname (please print) \_\_\_\_\_

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date

Researcher's Name & Surname (please print) \_\_\_\_\_

\_\_\_\_\_  
Researcher's signature

\_\_\_\_\_  
Date

## Appendix F: Confidentiality agreement

I \_\_\_\_\_ grant consent that the information I share during the focus group may be used by **Grant Mapoma Mwinsa** for research purposes. I am aware that the group discussions will be digitally recorded and grant consent/assent for these recordings, provided that my privacy will be protected. I undertake not to divulge any information that is shared in the group discussions to any person outside the group in order to maintain confidentiality.

Participant's Name (Please print): \_\_\_\_\_

Participant Signature: \_\_\_\_\_

Researcher's Name: (Please print): \_\_\_\_\_

Researcher's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Appendix G: Semi-structured interview questions**

**Duration of the interview: 1 hour**

### **A. BIOGRAPHICAL QUESTIONS**

1. Which level of ECE/preschool do you teach?
2. How long have you been teaching in ECE/preschool?
3. What are your academic qualifications?
4. How many learners do you have in your classroom?
5. How does your enrolment affect teaching and learning using games?
6. Does age of the learners affect the type of teaching method that you use, and how?

### **B. USE OF TRADITIONAL GAMES IN PRESCHOOLS**

7. What knowledge do you have on play-based learning?
8. Does this knowledge on play-based learning involve the use of traditional games?
9. How did you acquire this knowledge on use of traditional games in teaching and learning of preschool learners?
10. How useful has this knowledge been to your teaching career?
11. Can you identify traditional games that can be used to teach emergent literacy and numeracy skills?
12. How do you teach emergent literacy and numeracy skills using traditional games?
13. What challenges do you face in teaching emergent literacy and numeracy skills through traditional games?
14. How do you manage or cope with those challenges?
15. What strategies can you suggest that teachers can use to improve emergent literacy and numeracy skills in learners through traditional games?
16. How useful are traditional games in holistic child development?

## **Appendix H : Focus group discussion guide**

**Duration of focus group discussion: 2 hours**

### **A. INDIGENOUS GAMES AND EMERGENT LITERACY**

1. Identify traditional games that can be used to teach emergent literacy?
2. How do you teach emergent literacy using traditional games?
3. What challenges do you face in teaching emergent literacy through traditional games?
4. How do you manage or cope with those challenges?
5. What strategies can you suggest that teachers can use to improve emergent literacy in learners through traditional games?

### **B. INDIGENOUS GAMES AND NUMERACY SKILLS**

1. Can you identify traditional games that can be used to teach numeracy skills?
2. How do you teach numeracy skills using traditional games?
3. What challenges do you face in teaching numeracy skills through traditional games?
4. How do you manage or cope with those challenges?
5. What strategies can you suggest that teachers can use to improve numeracy in learners through traditional games?

### **C. KNOWLEDGE OF INDIGENOUS GAMES IN EARLY CHILDHOOD PRACTICE**

1. What knowledge do you have on play-based learning?
2. Does this knowledge on play-based learning involve the use of traditional games?
3. How did you acquire this knowledge on use of traditional games in teaching and learning of preschool learners?
4. How useful has this knowledge been to your teaching career?
5. How useful are traditional games in holistic child development?



## Appendix I: Observation checklist

Lessons and child play observations	Findings from the observations
1. Teaching and learning approaches used. Is play-based approach applied?	
2. How does the teacher link knowledge and skills in teaching to learner's background and culture to improve acquisition of emergent literacy and numeracy skills?	
3. Classroom environment/atmosphere can promote use of indigenous/local games.	
4. Outdoor area has enough space for a variety of traditional games to be played (active play for large and small groups)	
5. Teachers' use of knowledge of indigenous games in lessons.	
6. Teachers show desire to use traditional games in lessons for emergent literacy and numeracy skills (e.g. expressive and receptive skills, number concept).	
7. Learners' reaction when indigenous games are introduced during lesson.	
8. Learners react when indigenous games are introduced during outdoor play.	
9. Overall use of indigenous games in preschools to enhance holistic child development in learners.	

## Appendix J: Document analysis checklist

S/N	AREAS OF DOCUMENT ANALYSIS	YES	NO	COMMENTS
1	Curriculum content on games/play			
2	Schemes of work			
3	Weekly forecast			
4	Daily routine schedule			
5	Lesson plans			
6	Records of work done			
7	Implementation plan of activities			
8	Evidence of use of traditional games			

## Appendix K: Turnitin Report

PhD Thesis: The role of indigenous games in enhancing early learning among preschool learners in Chibombo District, Central Province, Zambia

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ORIGINALITY REPORT

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<b>6</b>	<b>Godfrey Ejuu. "African indigenous games: Using Bame Nsamenang's Africentric thoughts to reflect on our heritage, pedagogy, and practice in a global village", Journal of Psychology in Africa, 2019</b> Publication	<b>&lt;1</b> %
<b>7</b>	<b>www.communityplaythings.co.uk</b> Internet Source	<b>&lt;1</b> %

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8	<a href="http://www.researchgate.net">www.researchgate.net</a> Internet Source	<1 %
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12	Abdulkader, Fatuma Ahmed. "Exploring Saudi EFL Teachers' and Learners' Perceptions Regarding the Application of Communicative Language Teaching (CLT) in the English Language Classroom.", University of Northumbria at Newcastle (United Kingdom), 2020 Publication	<1 %
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19	Roopnarine, Jaipaul, Patte, Michael, Johnson, James. "EBOOK: International Perspectives on Children's Play", EBOOK: International Perspectives on Children's Play, 2015 Publication	<1%
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**Appendix L: Confirmation of language editing**

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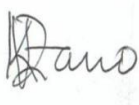
Reference number 1000686

28 January 2024

**THE ROLE OF INDIGENOUS GAMES IN ENHANCING EARLY LEARNING  
AMONG PRESCHOOL CHILDREN IN CHIBOMBO DISTRICT, CENTRAL  
PROVINCE, ZAMBIA**

This confirms that I edited substantively the above document, including a Reference list. The document was returned to the author with various tracked changes to correct errors and clarify meaning. It was the author's responsibility to attend to these changes.

Yours faithfully



Dr. K. Zano

Ph.D. in English

[kufazano@gmail.com](mailto:kufazano@gmail.com)/[kufazano@yahoo.com](mailto:kufazano@yahoo.com)

+27631434276