

**EXPERIENCES OF TEACHERS IN TEACHING LEARNERS WITH AUTISM  
SPECTRUM DISORDERS (ASD) IN SELECTED SPECIAL SCHOOLS IN LUSAKA  
DISTRICT, ZAMBIA**

**BY**

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Requirement for an Award of the Degree of Master of Education in Educational  
Psychology**

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**DECLARATION**

I, **Ngosa Doroth**, do hereby declare that this piece of work is my own, and that all the works of other persons have been duly acknowledged, and that this work has not been previously presented at the University of Zambia and indeed at any other University for similar purposes.

Signed..... Date.....

## ABSTRACT

Even though there are special schools supporting learners with Autism Spectrum Disorders (ASD), there are foreseen challenges in the teaching of learners with Autism Spectrum Disorders. This study investigated experiences of teachers in teaching learners with Autism Spectrum Disorders in three selected special schools in Lusaka District. The rate of autism at international, national, provincial and community levels is increasing and many education teachers are expected to teach children with autism in their classes. Even though there are special schools supporting learners with ASD, there are foreseen challenges in the teaching of learners with ASD. The objectives of the study were to; find out teacher knowledge on Autism Spectrum Disorders; ascertain challenges experienced by teachers in teaching learners with ASD; and establish some of the teachers' classroom strategies used in supporting learners with ASD. This study evoked a qualitative approach using a phenomenological research design, to be specific interpretative phenomenological research design. A sample of 12 participants consisting of special education teachers was purposefully and conveniently drawn from three government special schools in Lusaka District. Data collection instruments included interview guides and non-Participant lesson observation Checklist. Analysis of data was done using Interpretative Phenomenological Analysis which involved transcribing interview verbatims and analysing it for recurring themes relating to research objectives. The findings revealed that special education teachers had little knowledge on ASD, particularly its definition, characteristics and teaching strategies. Most teachers expressed challenges in coping with aggression, poor communication skills and lack of concentration in learners with ASD. Further, as observed by the researcher, the teaching of learners with ASD was hampered by a number of things; unstructured classrooms, inadequate teaching and learning materials, mixing of different disabilities in one class, undifferentiated teaching instructions, to mention but a few. Despite the aforementioned challenges, special teachers were appreciative of the strategies used in teaching learners with ASD in the classroom such as rewards, social stories, play, visuals, music and identifying learner's interest for teaching. Based on the findings, the study recommended that; untrained and formally trained teachers should be provided with information on ASD and specialised training in ASD; different stakeholders, in the ministry of Education and Health, should be engaged in the diagnosis and placement of children with ASD in schools; accommodative classrooms should be created according to learning needs; there should also be the provision of assistive teaching and learning technology to improve the learning process for learners with ASD.

**Key words:** *Autism Spectrum Disorder, Experiences, Teaching.*

## APPROVAL

This dissertation of **Ngosa Doroth** has been approved as a partial fulfilment of the requirements for the award of the Degree of Master of Education in Educational Psychology by the University of Zambia.

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Supervisor	Signature	Date
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## **DEDICATION**

I dedicate this dissertation to Jesus Christ Almighty without whom I would have never been where I am today; My loving, tolerant and supportive husband Kizito Chileshe, whose support has propelled me to higher heights throughout my studies; My very patient sons: Mukuka, Katongo and Nathan from whom I drew the strength to soldier on and be a great example to them, and to Marion Cornick and her husband Michael whose parental love, support and care paved the way to this achievements; and to my very dedicated lecturer and supervisor, Dr. Sylvia Mwanza- Kabaghe, who held the light along my bumpy road to success.

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## ACRONYMS

<b>APA</b>	American Psychiatric Association.
<b>ASA</b>	American Society of Autism.
<b>ASD</b>	Autism Spectrum Disorder.
<b>CDC</b>	Centre for Disease Control.
<b>DEBS</b>	District Education Board Secretary.
<b>DSMMD</b>	IV-TR-Diagnosis and Statistical Manual of Mental Disorders - Four -Text Revision.
<b>HFASD</b>	High Functional Autism Spectrum Disorder.
<b>IACC</b>	Intelligence Autism Coordinating Committee.
<b>IDEA</b>	Individuals with Disabilities Education Act.
<b>MOE</b>	Ministry of Education.
<b>NAS</b>	National Autistic Society.
<b>NDD</b>	Neuro Developmental Disorders.
<b>ODE</b>	Ohio Department of Education.
<b>PBS</b>	Positive Behaviour Support.
<b>PDD</b>	Pervasive Developmental Disorder.
<b>PECS</b>	Picture Exchange Communication System.
<b>PROACT- SCIPr-UK</b>	Positive Range of Options to Avoid Crisis and use Therapy Strategies for Crisis Intervention and Prevention-United Kingdom.

<b>SEN</b>	Special Educational Needs.
<b>TEACCH</b>	Treatment and Education of Autistic and Communication Related Handicapped Children.
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organisation.

## DEFINITIONS OF TERMS

The terms were defined in the way that they were used in this study. It is important to note here that there may be variations from the way others have used these terms. Thus the terms should not be interpreted as new terms; rather they should be understood in the context they were used in this study.

**Autism:** A complex, variable, biologically based pervasive developmental disorder that affects both the development and the brain functioning.

**Spectrum:** These are differences on the effects of autism in different individuals despite experiencing similar difficulties.

**Learners with ASD:** This will refer to all school-going children who have been formally diagnosed with Autism.

**Challenging Behaviour:** This term in this study was used to refer to behaviour that disrupted the learning and teaching process in school.

**Experiences:** These were reactions, feelings, opinions and stories that participants attach towards a certain phenomenon. In this instance, the reactions, feelings, opinions and stories teachers had towards the teaching and learning behaviours of ASD children.

**Positive Behaviour Support (PBS):** This is used as one of the suggested approaches that emphasized collaborative teaming and problem solving processes to create support programs and other interventions that stressed prevention and remediation of problem behaviours through the provision of effective supportive environment.

**Inclusive Education:** It is the inclusion of learners with special education needs into the mainstream schools.

<b>Autism Spectrum Disorder:</b>	Neurological disorders that are in different range affecting communication and social skills.
<b>Differentiation:</b>	Is a philosophy based on the premise that teachers should adapt their instruction to learner differences.
<b>Mainstream Schools:</b>	These are schools for typical children.
<b>Diagnosis:</b>	It's a label given to a disorder.
<b>TEACCH:</b>	Is an intervention program providing explicit instructions and visual support in a structured environment planned to meet the needs of the student.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Overview

This chapter presents the background of the study, the statement of the problem and the purpose of the study. It also includes the study objectives, research questions, limitations and delimitation of the study. It further highlights the significance of the study, theoretical framework and the operational definition of terms.

### 1.2 Background of the Study

In Zambia there are limited services for identifying and teaching children with autism appropriate education and self-help skills, yet the American Centre for Disease and Control and Prevention (2010) estimates that 1% of the world population are people with autism. According to the MOE (2008) 50,238 learners had intellectual impairments. These were in the national enrolment at basic level school and were classified as children with Special Educational Needs (CSEN). It is however not known how many of learners have Autism, because by the time of the study there was no clear statistical data on the number of children with ASD at national, provincial and district level in Zambia.

As the number of children with autism continues to increase, public schools must answer the challenge to educate students with autism placed in Specials education classes. The growing number of autistic students demands a higher level of coordination and planning among general and special education teachers; few school systems allocate the time and resources to promote these exchanges.

Educating learners with Autism Spectrum Disorder (ASD) in both special and regular schools continues to face some challenges related to learners' developmental problems, affecting a person's communication and social interaction (Kendra, 2013). A number of teachers have sometimes failed to recognise and accommodate children with ASD, due to reasons associated with attitudes, knowledge, perceptions and the willingness of teachers to teach learners with ASD. In many areas the word Autism is rarely understood by a number of individuals including teachers

who are the providers of educational services. The Autism Society of America (ASA; 2008) define autism as a complex developmental disability, typically appearing during the first three years of life. Autism is the result of a neurological disorder affecting the normal functioning of the brain, affective development in the areas of social interaction and communication skills.

Children with ASD are usually catered for in special schools. In order to accommodate these learners, modifications are made to the environment, curriculum and forms of communication used within the classroom (ODE, 2012). Most education policies have started to encourage the inclusion of learners with ASD in mainstream school settings where special provisions are not readily available (Kalyva and Avramid, 2005). Gena (2006) explains that mainstream schools have become an option for children with ASD in recent years, yet there seems to be lack of understanding regarding the needs of learners with ASD in a mainstream school setting. Some of the common limitations in learners with ASD are language, social skills and repertoires. Learners with ASD are usually isolated and have minimal social interaction with peers. Although schools are the ideal environment for implementing social skills, communication skills and daily living skills programmes, greater challenges are encountered by teachers who are not always trained enough to work with learners with ASD and are faced with: limited knowledge, limited teaching resources and time constrains in addressing learners' needs (Bellini, Peters, Benner and Hopf, 2007).

To address the issues alluded to in the preceding paragraph, the Ministry of Education in Zambia developed Special Schools and Units where children with Special Education Needs (CSEN), could enjoy education with guidelines on how they should be run (Ministry of Education, 1996). Furthermore, these emphasised inclusive education, where mainstream schools were made to include any child with special education needs. This view was reflected in the following statement, "To the greatest extent possible, the Ministry would integrate pupils with special educational needs into the mainstream institutions and would provide them with necessary facilities and resources. However, where need was established, the Ministry would participate in the provision of new special schools for the severely impaired" (Ministry of Education, 1991: 69). The integration of learners with intellectual challenges including those with ASD, was done through the opening of special education Units within mainstream Schools to give such learners opportunities to interact and compete socially and academically in the same learning environment.

According to Whitaker (2001: 109) “Between half and two thirds of all people with ASD have a significant degree of learning difficulty”. However, a study by Manclntosh and Geraldina (2013) conducted in South Africa and Tanzania, on the inclusion of learners with ASD into regular schools reveal that regular teachers have less knowledge and teaching skills for learners with ASD. This results in teachers becoming frustrated in trying to provide appropriate support to learners. In contrast to the inclusion of learners with ASD in regular schools, this study suggests that teachers’ understanding in relation to appropriate education services in an inclusive teaching environment is not yet positive because of less training in inclusive education at both pre and in-service teacher training. Hence, this study went further to investigate teachers’ experiences in teaching learners with ASD in three special schools in Lusaka since most of the studies concentrated on inclusion and not specialisation of services for learners with ASD.

### **1.3 Statement of Problem**

In Zambia, there are schools and units where teachers work directly with children displaying behaviours associated with ASD. Thus they manage learners’ needs on a daily basis. Several researches have highlighted the challenges that teachers face in this regard. For instance, Snell and Janney (2008) highlight challenging behaviours in learners with ASD which can result in the following challenges for teachers; impaired communication, aggressiveness, anti-social behaviours, hyperactivity, repetitive behaviour, poor eye contact and low concentration levels. Snell and Janney (2008) further explain that children who exhibit these behaviours are considered dangerous, socially inappropriate or disruptive, and make special demands on services. The problem is many teachers receive little, if any, formal instruction in evidence-based practices for children with autism. According to Levine (2006) many special education teachers serving autistic children have limited experience in teaching learners with autism but must educate all children in their class despite the disability or disorder to ensure a quality education for these children to meet the mandates outlined by the Ministry of Education.

Harris *et al*, (2008) also point out that learners with ASD present teachers with the challenge of responding to their needs and helping them to lead valued lives, notwithstanding their challenging behaviours. Geraldina, 2013; Manclntosh, and Cavanaugh (2012) based on their findings, reported that useful recommendations can be made in mitigating strategies for challenges faced by teachers

of learners with ASD in order to facilitate an improved learning experience. However, the experiences and knowledge of teachers of learners with ASD in special schools in Lusaka District is not yet known, a knowledge gap that this study intends to address. This is very important because without knowledge of teacher experiences, it would be impossible to improve service delivery.

#### **1.4 Purpose of the Study**

The purpose of this study was to investigate experiences of teachers in teaching of learners with Autism Spectrum Disorder (ASD).

#### **1.5 General Objective**

The aim of this study was to investigate experiences of teachers in the teaching of learners with Autism Spectrum Disorder (ASD) in three special schools in Lusaka District.

#### **1.6 Specific Objectives**

1. To find out teacher knowledge on ASD.
2. To ascertain challenges teachers experience in teaching learners with ASD.
3. To establish classroom strategies teachers use to support learners with ASD.

#### **1.7 Research Questions**

1. What knowledge do teachers have on ASD in Lusaka District?
2. What challenges do teachers experience in teaching learners with ASD in Lusaka District?
3. What classroom strategies do teachers use in supporting learners with ASD in Lusaka District?

#### **1.8 Significance of the Study**

It is anticipated that greater knowledge on the realities of teaching children with ASD in Zambia's educational institutions like special schools may enhance potential understanding and trigger workable interventions to enable learners with ASD achieve their potentials and live independent lives that are fulfilled. This study is relevant to the transformation of special education in Zambia

and can be used to facilitate the development of support services in both special and mainstream schools to better accommodate learners with ASD.

The findings of this study may also be of great value to policy makers in the Ministry of General Education and other stakeholders as it may enlighten them with teaching experiences of teachers handling learners with ASD in special schools. Thereby improve on teacher preparation programs, professional development programs, and other continuing education programs that can help achieve the goal of empowering learners with ASD, academically and socially. Social change can come from teachers using better informed instructions and assisting their learners with ASD to receive a better education in order for these to be ready to take their place in society.

Furthermore, the findings of the study may add value to the existing literature, make recommendations and provide valuable information for further and future academic research because other researchers might build on the gaps and limitations of the current study.

## **1.9 Theoretical Framework**

The study was anchored on Self-Efficacy Theory by Albert Bandura, (1977). It defines an individual's belief in his or her ability to achieve goals. Self-efficacy strongly influences behaviours affecting health. Therefore, the selection of this theory was based on the assumption that teachers' experience of challenging behaviours in learners with ASD will be determined by the extent of their innate abilities to influence events.

Self-efficacy refers to individuals' beliefs about their capabilities to carry out a particular course of action successfully (Bandura, 1997). Extensive research supports the claim that self-efficacy is an important influence on human achievement in a variety of settings, including education, health, sports, and business (Bandura, 1997). In educational research, the self-efficacy beliefs of teachers have been shown to play an important role in influencing achievement and behaviour. Furthermore, researchers are finding that teachers' self-efficacy influences their teaching behaviours and their students' motivation and achievement (Skaalvik and Skaalvik, 2007; Tschannen-Moran & Woolfolk Hoy, 2001). Teachers with low self-efficacy experience greater difficulties in teaching, higher levels of job-related stress (Betoret, 2006) and lower levels of job satisfaction (Klassen *et al.*, 2009).

Self-efficacy researchers agree that teachers' self-efficacy should be operationalised to reflect beliefs about capability and therefore should be phrased "in terms of can do rather than will do. Can is a judgment of capability; will is a statement of intention" (Bandura, 2006, p. 308). In addition, self-efficacy measures should reflect a particular context or domain of functioning rather than global functioning (Bandura, 1997). This theory is relevant to this study in that teachers' self confidence is a determinant in the way a teacher experiences the phenomena of teaching and supporting learners with Autism Spectrum Disorders (ASD).

### **1.10. Delimitations of the Study**

The scope of the study was limited to three selected special schools in Lusaka District, namely: Chainama Special, Bauleni and University Teaching Hospital special School, and only special education teachers teaching learners with ASD. The three selected schools were conveniently accessible for the study and had learners with ASD.

### **1.11 Limitations of the Study**

Msabila and Nalaila (2013) postulate that limitations of a study include potential challenges anticipated or faced by the researcher. Therefore, the study had a number of limitations such as; the study was limited to schools in urban areas, it concentrated on public primary schools not private primary schools, and the number of participants was small compared to the population of a province and nation. Therefore, due to the above limitations the results cannot be generalised.

### **1.12 Summary of the chapter**

In this chapter, background literature to the research topic was presented. In particular, this chapter focused firstly on the statement of the problem, purpose of the study, research objectives, research questions, significance of the study, theoretical framework, delimitation, limitations and definition of operational terms in the study. The next chapter endeavours to review various literature relevant to the study at hand, based on the Global, African and Zambian context.

### **1.13 Organisation of the Dissertation**

Chapter one presented the background, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, theoretical framework, delimitation and

limitations. Chapter two reviewed literature related to the study on the experiences of teachers in teaching learners with Autism Spectrum Disorder. Chapter three discussed the methodology that was employed in this study. Under methodology, the following items were captured; philosophical assumption, the research design, target population, sample size and sampling techniques, research instruments, data quality assurance, data collection procedure, data analysis and ethical issues. Chapter four presented findings from semi-structured interviews and observation of lessons in the classroom setting using an observation checklist in order to verify the challenges and strategies experienced in teaching learners with Autism Spectrum Disorder. Chapter five presented the discussion of findings in line with the research objectives. Chapter six presented the conclusion and recommendations of the study. Finally, the chapter ends by suggesting areas for further research based on the findings of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

This chapter presents a comprehensive literature review. Autism is discussed including definitions of ASD, prevalence of autism, diagnosis, teacher knowledge, experienced challenges, and strategies in educating children with autism. Most of the literature is on mainstreaming or including children diagnosed with ASD in general education classes as well as differentiated instruction. This study researched on the experiences of teachers in teaching learners with ASD in special schools. Therefore, the chapter highlights literature related to the study and how the literature's perspective relates to the present study. The information gathered from the literature is used to set a benchmark from which the same experiences can be used in Zambia to help teachers in teaching learners with ASD. The specific objectives of the study were used to organize the literature review.

#### **2.2 Teacher knowledge on Autism**

##### **2.2.1 Defining Autism**

The earliest mention of autistic behaviour dates back to the 18<sup>th</sup> century derived from the Greek word *autos* meaning “self” and was first used by Bleuler (1911 and 1950). Bleuler applied the term autism on adult patients with schizophrenia. Later, Kanner, an American psychologist (1943) studied these behaviours in children and formed the foundation of autism history. Kanner was the first researcher to describe autism as a disorder starting in childhood and lasting for a lifetime. He coined the term infantile autism during his study with children (ASA, 2008).

According to APA (2013) Autism is a chronic neurodevelopment disorder. The children displayed an inability to relate themselves with peers and situation from the beginning of life (Merrell, 2008). Kanner's description of autism included; communication deficits, good but atypical cognitive potential and behavioural problems such as repetitive actions, obsessive and unimaginative play (Wicks-Nelson and Israel, 2009). Children with Autism are usually self-centred and live in a world of their own, with less social interaction with others.

Autism Spectrum Disorder is an increasingly famous term used to refer to a wide definition of autistic behaviours (Volkmar and McPartland, 2014). Autism as a spectrum disorder covers a range of disabilities, behavior, and skill levels a child may show in any degree of severity from mild to severe. The spectrum of autism can range from disorders in the child's communication (speech), cognition (how he or she processes information), social interactions (how he or she responds to others) and motor development (how a child uses their body, hands, or feet to convey what they want).

Presently, autism and pervasive developmental disorders are commonly referred to as Autism Spectrum Disorders (ASD) (Carr, 2006). The term "spectrum disorders" indicates that despite sharing common difficulties, the way in which the disorder affects children is different. Additionally, Munsaka and Matafwali (2013) explain that the condition falls under a broader category of spectrum of developmental delays known as Pervasive Developmental Disorders (PDD). Some individuals with ASD can live fairly independent lives while others have additional learning difficulties that require lifelong specialist support (The National Autistic Society, 2012). In this study the abbreviation ASD is used to refer to Autism.

However, various definitions point to the fact that autism is broad, and reflects a wide range of individual impairments in communication, social interaction and unusual patterns of behaviours, interests and activities. Most learners with Autism have notable abnormal impaired social interactions and communication, abnormal development of cognitive skills, body posture and movements, and a restricted repertoire of activities and interests. Such learners usually develop one narrow interest and insistence on following routines (APA, 2000). Many professionals in the medical, education, and vocational fields are still discovering how ASD affects people and how to work effectively with individuals with ASD. According to Gena (2006) mainstream schools are the only priority for parents of children with ASD nowadays, despite the limited understanding to issues pertaining to inclusion among teachers in mainstream schools. Research shows that one need for children with ASD is language use and social repertoires. Despite the vast information on this disability, little is known on the experiences of teachers who teach learners with ASD in special schools, hence the need for the current study.

Learners with ASD present behaviours that challenge teachers and caregivers in schools. Children with ASD also have little sense of danger and are often very energetic. Running away is a frequent

problem which requires close supervision from teachers. This behaviour is unpredictable and could be so disruptive during lessons. However, it is not known in Zambian special schools how teachers experience the teaching of learners with ASD and the strategies teachers use to cope with the disorders.

### **2.2.2 Diagnosis of ASD**

Diagnosis is not a quick process and is much like putting together pieces of a puzzle. ASD is diagnosed through the presence or absence of certain behaviours, characteristic symptoms, or developmental delays. Often several tests may be performed to rule out other medical conditions such as loss of hearing which may be causing the social and communication impairments before considering a diagnosis of ASD (Autism Genome Project Consortium, 2007).

The Diagnosis and Statistical Manual of Mental Disorders-IV (DSM-IV-TR) (American Psychiatric Association, 2000) provides the diagnostic criteria by which we can better understand ASD. The DSM-IV-TR is a listing of psychiatric disorders and their corresponding diagnostic codes that provide the criteria by which clinicians define and diagnose various developmental and psychiatric conditions. Autism falls under the umbrella term called Pervasive Developmental Disorders (PDD).

According to the DSM- IV- TR (APA, 2000) in order for a diagnosis of Autism to be made, two items from the section related to impairments in social interaction, communication and imaginative or symbolic play must be present in a child. For example, impairment in non-verbal communication such as eye contact, impairment in conversation skills such as failure to initiate a conversation and maintain it or impairment in imaginative play such as pretending to cry. For diagnosis to be made, a significant delay in social interaction, communication and imaginative play must be present before the age of three years. ASD is mostly associated with sensory disorders. Children with ASD can be hypo and hyper sensitive to a variety of senses including, taste, sight, smell and noise. These elements need to be considered in developing suitable learning environments for learners with ASD in schools.

The Individuals with Disabilities Education Act (IDEA, 2012) is an educational diagnosis of Autism which is different from clinical diagnosis. The National Autistic Society (2012) states that the Autism category was first established by IDEAS in 1999, and since then children with a

clinical diagnosis are eligible for school based services, under the ASD category. IDEA specifically defines Autism as a developmental disability significantly affecting verbal and non-verbal communication and social interaction adversely affecting a child's education performance. This also includes other characteristics associated with ASD such as repetitive movements, stereotyped interests, resistance to change or routines and unusual responses to sensory stimuli.

Late diagnosis has been found to characterize ASD and other NDDs among African children in spite of early parental concerns about development (Bakare and Munir, 2011). This late diagnosis is attributed to; poor knowledge and awareness about ASD, negative cultural beliefs and practices, and inadequate trained personnel to provide assessment and diagnosis services (Bakare *et al.* 2009). Many minority children often go undiagnosed with ASD because of the parents' lack of knowledge of the symptoms and often think their child is going through a phase and will outgrow their difficulties (Mandell and Novak, 2005; Tek and Landa, 2012). Further, Mandell (2005) found African children were diagnosed 2.2 years later than children in the western world. This gap was and is still attributed to lack of knowledge or misdiagnosis for children in low-income communities. Poverty has an effect on diagnosis on children raised in socially isolated or economically depressed areas.

In Zambia, the number of children diagnosed with ASD has increased. This could be due to an increase in awareness programmes on the education and service delivery for children with ASD. Some parents have become aware of intervention services available in Zambia and are able to relate some of the listed characteristics to how their children behave and have requested for assessment because they are now sure that the community is ready for their children with ASD. However, Munsaka and Matafwali (2013) argue that children with autism in Zambia remain undiagnosed or inappropriately diagnosed because of lack of standardized instruments to be used. This may lead to misdiagnosis, wrong placement and wrong intervention strategies in schools.

Furthermore, Bambara, Non-nemacher and Kogers (2005) added that, to diagnose ASD, a multi-disciplinary team consisting of medical, therapists, psychologists and educators all contribute in coming up with the diagnosis of ASD. In this study diagnosis of ASD plays a big role because it has an effect on the teaching experiences of teachers in school. For example; if a child is wrongly diagnosed, then such a child can be wrongly placed and in the end pose a challenge to teachers teaching them and may also receive wrong services.

### 2.2.3 Causes of ASD

There are several theories about the causes of ASD. Researchers are exploring various explanations but, to date, no definitive answers or specific causes have been linked scientifically to the onset of ASD. Research suggests that individuals with ASD experience biological and neurological differences in the brain, (Autism Genome Project Consortium, 2007).

In many families there appears to be a pattern of ASD – related disabilities which suggests that ASD is an inherited genetic disorder. Current studies show that certain classes of genes may be involved or work in combination to cause ASD. There appears to be many different forms of genetic susceptibility but to date no specific gene has been directly linked to ASD (Autism Genome Project Consortium, 2007).

A teacher's knowledge and training for working with children diagnosed with ASD must be sufficient to assist in identifying strategies or programs to help learners with ASD in their classrooms to be academically and socially successful (Yang, & Rusli, 2012). Special education teachers are expected to be knowledgeable about learners with ASD, to provide a quality learning environment for learners placed in their classrooms. Special education teachers may need to receive more professional development training to ensure quality education for all learners, especially for those children with ASD who have been placed in their classroom. Professional development is important to the educational growth of teachers and administrators and is a way for educators to improve in best practices in education to increase student achievement for all students.

Educators are inundated with demands to carry out new instructional interventions to improve student achievement (Guskey, 2010). Some special education teachers lack the necessary skills to interact with learners in an instructive manner. Levine (2006) states that, many teachers are not able to modify lessons and adapt classrooms to meet the personal needs of learners with ASD. For placements to be triumphant, educators must have knowledge and access to empirically supported strategies to help them in this process (Camargo *et al.* 2014; Harrower & Dunlap, 2001). Because no agreement has been reached on suitable education practices for learners with ASD, special schools often face difficulties deciding about programs they select to use (Dunlap, Iovannone, and Kincaid, 2008).

Loiacano and Valenti (2010) reported that most teachers who graduate from university teaching programmes have minimum training in evidence-based practices for children with ASD. Knowledge of autism spectrum disorder can improve a teacher's preparation of educating students with ASD. A study by Sansosti and Sansosti (2012) found that teachers reported a limited understanding of High Functioning Autism Spectrum Disorder (HFASD) as the single most significant barrier to successful inclusion in school settings. Their study also reported that the average educator with limited training and exposure to students with ASD harbours stereotypical or significantly limited definitions of this disorder.

Additionally, Hendricks (2012) also found special education teachers who serve students with autism to have low to intermediate levels of knowledge of the disorder and effective instructional practices for students with ASD. Segall and Campbell (2012) reported obvious differences in knowledge, awareness of practice, and the use of strategies across general education teachers, special education teachers, administration, and school psychologists. In particular, school psychologists and special education teachers reported higher levels in each of these domains than the general education teachers and administrators. Pre-service teachers reported that they also had limited knowledge of the general characteristics of ASD; how to provide support in the classroom; and more than half believed only teachers with extensive special education experience can be expected to deal with students with ASD in the school setting (Barned, Knapp, & Neuharth-Pritchett, 2011).

Furthermore, Nyoni (2012) stated that medical practitioners, paediatricians and teachers need to improve their knowledge so that ASD conditions can be identified at an early stage during a child's development. Staff training in the management of challenging behaviours was based on the rationale that the modification of staff behaviour by increasing knowledge and understanding of challenging behaviour should help to reduce negative interactions.

Thus there have been attempts to increase staff knowledge and understanding of challenging behaviour in learners with ASD (McDonnell, 2010). Training of special education and general teachers is of great interest to researchers, due to the increase in children diagnosed with ASD in schools. The varying degrees of severity each student exhibits make it crucial for educators to be trained to teach a variety of learners with ASD. Parents of children with ASD identify teacher training as the single most enabling factor in providing for their children's education settings

(Nyoni, 2014). Additionally, Jordan and Jones (1997) state that staff training should be priority if schools are to meet the needs of learners with ASD. Booth and Ainscow (2002) recommend having policies in place to ensure training is received by staff in schools.

If special education and general education teachers lack appropriate training to work with students with ASD, it cannot be expected that these children will show improvement (Dymon, Gilson and Myran, 2007). Teaching children with ASD may require scientific approaches that are not familiar to mainstream teachers. However, training teachers in ASD can be difficult because researchers have not yet determined one ideal intervention or curriculum that works for all learners on the spectrum (Mckenna, 2007). A study by Hess *et al.* (2008) found that only 10% of the strategies used with learners with ASD in Georgia schools for example, were based on scientifically based practices. Teachers generally reported a lack of adequate preparation to teach learners with ASD.

In consensus with some other findings, Busby *et al.* (2012) found that in his study all participants reported minimal or no training or experience regarding teaching learners with ASD. This demonstrated that teachers who happen to teach learners in an inclusive setting are less likely to manage learners with ASD appropriately because of minimal skills and knowledge on ASD. According to a study by Muller (2005) few states award licenses in the area of ASD thus pointing to a lack of guidelines mandating specific teacher qualities and requirements. Teacher training not only ensures learners are more included in lessons but it can also make teachers more confident in working effectively with learners with ASD (Glashan, Mackay and Grieve, 2004). Training further leads to teachers having a more positive attitude towards teaching and supporting learners with ASD. Leblanc, Richardson and Burns (2009) provided 200 minutes of training to teachers enrolled at an unnamed university. Results indicated that training increased knowledge of access to professional support, resources to assist in meeting the needs of learners and increased knowledge of ASD and evidence-based practices in special education.

Furthermore, Collard and Blackmore (2016) conducted a study on the evaluation of the effectiveness of PROACT-SCIPr-UK on staff and the dissemination within organizations who support individuals with intellectual and developmental disabilities. The researchers employed a mixed method research design on 34 participants comprising of 10 instructors and 24 support staff who directly worked with individuals showing challenging behaviours in two organizations. Data was collected through interviews and questionnaires to measure the impact of PROACT-SCIPr-

UK on staff perceptions to challenging behaviours in implementing the approach. Results showed that post-PROACT-SCIPr-UK trainings gave participants confidence and competence to support individuals who exhibit challenging behaviours. Trainings reduced the escalation of serious incidences from occurring. Even though the study was conducted in UK, it gave direction to our study on the importance of specialized training on approaches that are individual-based. It also enabled us to compare foreign approaches and adapt them to suit the Zambian situations in managing challenging behaviours in learners with ASD.

Training teachers to specifically understand and manage challenging behaviours in learners with ASD was less common in the field of special education. A British study reported the outcomes of a 15 hour training course which examined the causes of challenging behaviour; person centred planning and communication strategies (Moniz-Cook *et al.*, 1998). The sample consisted of two care homes. Two houses received training and one house acted as a control. Staff rated residents' interactions using challenging behaviour inventory at baseline, post-training, and at a 13 months follow-up. Challenge severity and frequency did not decrease but staff ratings of managing difficult behaviour difficulties improved.

Numerous studies have concluded that teacher training not only ensures students are more included in lessons but it can also make teachers feel more confident in working effectively with students with ASD (Glashan, Mackay, and Grieve, 2004). Training can result in teachers having a more positive attitude towards an inclusive setting with population of students with ASD (Avramidis, Bayliss and Burden, 2000).

#### **2.2.4 Prevalence of ASD**

Prevalence is a measure of the status or burden of a disorder among a defined population at a particular time (Kopetz & Endowed, 2012; Peacock & Yeargin-Allsopp, 2009; Wiggins *et al.* 2015). Prevalence provides a snapshot of a condition at a certain time and among a particular population. The first report on the prevalence of ASD in Africa was three decades ago in the 1970s by Longe (1976) and Lotter (1978) who reported ASD among African children in countries such as Ghana, Kenya, Zimbabwe, Nigeria, South Africa and Zambia. During this period, the prevalence of ASD in Africa was at about 0.7% among children with Intellectual Disabilities (Lotter, 1978).

In recent years, there has been an increase in the prevalence of ASD going at 11.5% and 33.6% in Africa among children with developmental disabilities (Seif Elden *et al.* 2008). Statistics from the Centre for Disease Control and Prevention (CDC) (2012) suggest that ASD affects one in every eighty-eight children, with the diagnosis of Autism being five times more common in boys than in girls. It is however very difficult to determine the reason for this increase and it can most likely be attributed to an improvement in the identification of the disorder rather than an increase in its occurrence. But a hospital based population study in Nigeria found that an increase in ASD cases was influenced by low help seeking behaviour for Childhood Neuro Developmental Disorders (NDD) (Bakare *et al.* 2012). Research further showed that cases of ASD are reported in all ethnic and socioeconomic groups everywhere in the world. This led to an increase in the areas of aetiology of ASD, issues of diagnosis, treatment and educational support.

According to the Intelligence Autism Coordinating Committee (IACC, 2011) Autism was more common in the United States than childhood cancer or juvenile diabetes and this increase had created a national health emergency. In addition, research had shown an increase in the numbers of children diagnosed with ASD and had especially shown an increasingly upward trend in the past. This led to president Obama's endorsement of Autism awareness month and verbal proclamation of World Autism Awareness Day. Furthermore, IACC (2011) reported that Autism was on the rise and there was need to address and examine this population.

ASD is now recognized as the most common neurodevelopment disorder (Geneva Centre for Autism, 2006). An increase in the number of children diagnosed with ASD was linked to community awareness and a wide range of information on the characteristics, diagnosis and available services. Documentation has indicated that the national prevalence of ASD is estimated to range from 1 to 3.57 per 1,000 people in the world with notable studies in Australia, China, Germany, UK and USA, (Fombonne *et al.* 2006). No matter how small the prevalence, it is an indication that ASD is present in people all over the world, Zambia inclusive.

In most African countries it is difficult to estimate the exact number of children with autism due to lack of statistical data (African Journal of Psychiatry, 2011). In Zambia, the MOE (2008) stated that 50,238 learners had intellectual impairments. These were in the national enrolment at basic level school and were classified as children with Special Educational Needs (CSEN). It is however not known how many of these have ASD. This made it a suitable research area and justifies the

need to carry out an investigation into the experiences of teachers in teaching ASD learners in Lusaka District.

## **2.3 Experienced Challenges in Teaching Learners with ASD**

Although some teachers were trained, their experience and implementation of behaviour management skills in teaching learners with ASD was not well established hence the need for this study. It is believed that as teachers become more skilled in understanding why challenging behaviour occurs and the functions of the challenging behaviour, teachers develop more positive experiences in teaching learners with ASD, fostering behaviour change, and respect the well-being and value of the learners. Managing the behavior of some students with ASD can be a challenging and stressful issue faced by school teachers. Behaviours such as destruction of property, physical aggression, self-injury, and tantrums are affected by and can affect the development of appropriate social and educational skills. Students exhibiting these behaviours are often at risk of exclusion and isolation (National Research Council, 2001).

### **2.3.1 Impairment in Social Interaction**

In a school setting, teachers often experience difficulties in educating learners with ASD because of social deficits. Social understanding and behaviour problems are a common experience for individuals with ASD thus creating a challenge for teachers to manage their needs (Emam & Farrell, 2009). Children with ASD who are in the school setting experience tremendous stress and anxiety due to their difficulties in social and emotional understanding (Emam & Farrell, 2010). Students with ASD especially feel anxiety in social settings. Therefore, the school setting can often become a stressful and scary place for a student with ASD. Research infers that children with ASD often have average to high intellectual ability thus proving their ability to academically meet standards in a school setting. However, meeting academic standards is often challenging due to their difficulties in social and emotional understanding.

Walker, Ramsey and Gresham (2004) refer to challenging behaviour as ‘antisocial behaviour’ which may range from hostility or aggression to minor annoying defiance. They suggest that antisocial behaviour is perhaps the most destructive behaviour pattern that children and youths can adopt; one that sets them up for a lifetime of sadness, disappointment and failure. Walker *et al.*,

(2004) also indicate that pro-social behaviour as opposed to anti-social behaviour is that which refers to cooperative, positive and mutually acceptable forms of social behaviour. Despite these social deficits, teachers become creative in implementing the school curricular so that learners with ASD would be responsive to learning. Research has found that teachers go to great lengths to promote independent functioning for their ASD learners (Boutot, 2010).

In a study by Harris *et al.*, (1996) teachers of children with ASD mentioned hyperactivity, physical aggression, non-compliance, disruption, as being challenging behaviours. Self-injury, shouting, destruction of property and shouting were frequently mentioned as severely challenging behaviours. In terms of explanation given for challenging behaviour, teachers in Kiernan and Kiernan (1994) cited in rank order; attention seeking, demand avoidance, communication problems, stress, interference with routines and provocation. Soto-Chodiman *et al.*, (2012) found that not only teachers but also other learners find some learners with ASD with features such as the stereotypic utterances, physical mobility and problematic interactional behaviours upsetting. The outperforming perceived challenge was the issue of increased workload related stress which the study's participants stated that they experienced when attempting to modify their class curriculum and teaching techniques to meet the language, communication and behavioral needs of their students with ASD which were also perceived as challenges. When teachers continue to think that disruptive behaviour is that which disrupts others, they do not appear to acknowledge what a learner may be trying to communicate and that they are not aware of the purpose of the learners' behaviour. Therefore, this study brought out information on how teachers defined challenging behaviour and how they responded to it thus providing the study with the general picture of definitions and causes of challenging behaviour then specifying and comparing them with the experiences of teachers in Zambian Special schools.

Feelings toward pupils who presented these challenging behaviours included: frustration, anger, stress and detestation. Weiner's (1973) Attribution Model stresses that teacher or staff perceptions of a situation mediate their behavioural responses. Teachers may have negative thoughts about working with a child with challenging behaviour in class which directly affects the deep-held beliefs which the teachers reflect. There is enough knowledge showing that teacher perceptions contribute to challenging behaviours in learners with ASD. Teachers have their own learning history of managing challenging behaviour and conflict resolution.

The thinking style of teachers and perception of situations in working with challenging behaviour influences how they manage the learners' behaviour in children with ASD. It is important to have an understanding of how teachers perceive behaviours because some types of behaviour would challenge some teachers in a way that they do not challenge others. For example, some teachers would be able to manage or tolerate levels of disruption to their lessons which others cannot. It is not necessarily the behaviour that challenges. Rather it is the circumstances in which the behaviour happens which make it challenging and that again depends on how the behaviour was perceived within the context (Richardson, 2003). Emerson (2001) explained that it was likely that an individual's own understanding of challenging behaviour will depend largely on when and how it was experienced.

### **2.3.2 Challenging Behaviours**

Challenging behaviours have remained a major issue of concern for many years in special schools. A definition of what constitutes challenging behaviour depends upon the context in which it occurs and how it is experienced by teachers (Hill and Hawk, 2000). Emerson (1995) defined challenging behaviours as culturally abnormal behaviours of such intensity, frequency or duration that has the physical safety of the person and others placed in serious jeopardy or behaviour which is likely to seriously limit or deny access to and use of ordinary community facilities. This leads to calling or labelling such individuals as bad elements and their behaviour as challenging in that society. Teachers usually experience challenging behaviour in line with teachers' confidence level or self-efficacy and how much knowledge or skills they have in teaching learners with challenging behaviours.

Another definition of challenging behaviour may be, "Behaviour which is a barrier to learning and limits social interaction" (Marion, 2010:20). This is a helpful definition for teachers who work with challenging behaviours because it may help in considering appropriate remedial strategies and in the development of a functional curriculum which reflects the needs of the child and offers access to community services. A child with ASD usually has additional learning difficulties and has special needs (Ellen, 2005). These labels tell us that a child with ASD will have learned much less over the years than his or her normal peers. The child with ASD is also likely to have learned a variety of unusual or abnormal behaviours which other peers seldom show. Typically, the child

with ASD has learned fewer appropriate adaptive skills and finds learning difficult (McDonnell, 2010).

The following are some of the categories of challenging behaviours in children with ASD; violence, self-injury, destruction, repetitive and disruptive sensory misconception. The causes of such behaviours are complex and have a specific function even after careful observation and analysis. Some behaviours arise from physiological needs and others may be related to organic brain dysfunctions (Westwood, 2004). For example, an outburst of aggressive behaviour may be related to an epileptic seizure, hormonal change, constipation or drug side effects. It is important to develop an understanding of the variety of causes contributing to challenging behaviour for the development of a proactive plan of action (Janney and Snell, 2008).

The Wessex Survey (2010) suggested that from a total population of 100,000 there would be 10 children and adults with ASD and severe challenging behaviour. It was revealed that these children would be excluded from special schools and their families were likely to have requested for crisis intervention and home-based intervention provision. They had been prescribed with high levels of a variety of medication to “control” the behaviour that comes with ASD. In order to ascertain the extent to which teachers experience the teaching of learners with ASD, there are no figures on the population of persons with ASD and how device their challenging behaviors in Schools, hence the need for the study.

It has also been presumed that the purpose of behaviour is to have needs met. Strong relationships between setting events and challenging behaviour have been documented in a number of research studies (Carr, Reeve, and Manito-McLaughlin, 1996; Horner Day and Day, 1997). In one study, 13 to 15 adolescents and young adults in the study with severe intellectual disabilities, were twice more likely to display disruptive and self-injurious behaviours on days with targeted setting-events than on days without targeted setting-events. The setting-events that influenced the learners included fatigue, pain, changes in staff or schedule, being denied an outing or favourite toy, noise, colours or irritating clothing.

In another study that examined the influence of setting events in functional analysis of severe challenging behaviour of four girls with ASD, revealed that menstrual discomfort was a setting-event for challenging behaviour that was then triggered by task demands (Carr *et al.*, 2003). Setting-events cannot always be avoided but their negative influence can be mitigated if teachers

and others understood the purpose of behaviour. Behaviours such as aggression or violence towards others, screaming, not completing tasks, talking constantly or running in class are rightfully viewed as challenging behaviours in educational settings (Westwood, 2004). However, the severity of the behaviour will depend on the teachers' understanding or tolerance of what they believe or experience as being misbehaviour or challenging behaviour. Furthermore, many descriptions of challenging behaviours in learners with ASD given by teachers along with decisions regarding subsequent interventions do not always reflect an understanding of learners' own reasons for the behaviour. A learner who is perceived as challenging by one teacher can be described as a youngster by another (Emerson, 2001, Kauffman *et al.* 2002).

Dhaliwal (2013) completed a qualitative research, where it was concluded that teachers felt that challenging behaviours are stressful. The research set out to collect information from eight primary school teachers through a semi-structured interview, their perception regarding learners challenging behaviours and what strategies they used to manage these behaviours. All the eight participants were of the opinion that managing challenging behaviours is not an easy thing to do but if a teacher is well supported by school management and has a positive relationship with learners presenting challenging behaviour, then the teacher would be more effective at doing his or her job. This aforementioned study was vital to our study because it was based on qualitative research with themes which were in line with what this research was trying to explore.

Teachers may need to reflect on their relationships with learners with ASD. There is strong evidence that teacher-pupil relationships can improve social and academic growth in learners with Autism (Janney and Snell, 2008). Ideal teachers are usually described as cooperative, approachable and have leadership qualities. Yet learners whose behaviour is disruptive, antisocial, destructive, distractive, or aggressive can be a bother to teachers and lead the teachers to respond impulsively, sarcastically or even aggressively.

According to Scott and Caron (2005) disruptive behaviours prevent teaching from taking place and prevent a learner from participating in class activities and engage in interactive activities with peers. Examples include, hand flapping, acting out, crying or pushing away friends to avoid interaction. On the other hand, destructive behaviours are life threatening behaviours to others and self. Such behaviours include, biting, hitting, eye poking, head banging, scratching, or refusing to eat (Horner *et al.*, 2000). These behaviours should be addressed immediately through a plan for

safety management. However, they can be challenging to teachers because they require a lot of attention and energy.

Teachers therefore need to exercise caution before they conclude that a learner is exhibiting challenging behaviour (Emerson, 2001). There has been considerable research suggesting that how teachers conceptualize the causes of challenging behaviour bears a strong impact on their emotional and cognitive response to the behaviour (Chesbro and McCroskey, 2002; Wearmouth, Glynn, and Berryman, 2005). Most parents are knowledgeable of the behavioural difficulties of their child and it can be a disturbing process to regularly receive a listing of their child's misbehaviours throughout the day from teachers. In most situations as teachers experience the teaching of learners with ASD, it is unnecessary to report the daily incidences of non-compliance, off-task behaviour, and other occurrences if these are an ongoing or typical component of the child's behavioural profile.

### **2.3.3 Impairment in Communication Skills**

Problems with language and communication imply that the student may not be able to express needs, request help, or discuss feelings of anxiousness or pain (Whittaker, 2001). Non-verbal communication difficulties include, not understanding facial expressions given by the teacher or peers, joint attention difficulties, lack of eye contact, and a lack of response being interpreted as disobedience instead of lack of understanding (Gans and Simpson, 2004). Communication can take a variety of forms and may not necessarily include the use of speech. For example, body language, eye contact, gestures, singing, symbols, pictures, photographs, real objects, music and pointing (Gill, 2006). An inability to communicate feelings, needs, choices and wishes often led to anger, frustration and social withdrawal. Unless teachers can communicate with the learner and the learner with the teacher, then learning is unlikely to take place.

When teaching communication skills in learners with ASD, teachers need to use functional settings for example a home, school, playroom or hospital settings. Robinson and Trower (1999) argue that communication is the most central and important characteristic of human beings. Hollins (2007) contends that the ability to interact successfully with peers and significant adults is one of the most important areas of student's development. These statements indicate that people living with ASD are at a clear disadvantage in coping with school and the world at large because of limitations in

speech. The impact of these deficits can range from not being able to understand other people and also being misunderstood by other people. Therefore intervention for pupils with ASD needs to focus on teaching communication skills so that it aids to the development of social skills and imagination (Hollins, 2007).

Furthermore, Preis (2006) states that children with ASD do not just have verbal communication difficulties but the condition also affects receptive language difficult and understanding spoken language. This entails that children with ASD will have challenges following commands, requests, understanding questions or statements and following a topic in a conversation. Due to communication challenges in learners with ASD, teachers may experience challenges in teaching because teaching involves exchange and processing of information. Their limited range of interests and resistance to change means they restrict their own opportunities to learn new and more appropriate skills (Szatmari, Bremmer, and Nagy, 1989). Additionally, many students become easily stressed and emotionally uncontrollable when faced with change and environmental stressors leading to an increased risk of tantrums, noncompliance, and aggressive behaviours (Myles, 2005).

According to Hodgdon (1999) the causes of behaviour difficulties are frequently related to communication difficulties, problems in understanding or difficulty in expression. The best method is using visual strategies, for example, PECS (Picture Exchange Communication System) to support communication. A study by Mbewe (2016) showed that children that are introduced to Picture Exchange Communication System can really benefit in classroom learning activities by communicating effectively using pictures.

#### **2.3.4 Unstructured Teaching Environment**

All children function better in a predictable environment. Therefore, consideration should be given to the size, space, and arrangement of the physical and visual elements in the learning environment to ensure that they are conducive for student learning. Students with ASD may be unusually sensitive to sensory stimulation which can be reflected in an increased sensitivity to the physical environment of the learning situation. The classroom is filled with many sensory demands that can be overwhelming for some students. Although some of these demands, such as noise in the hallway and fire alarms, are unpredictable, teachers should monitor the physical environment to

ensure that the sensory distractions (such as auditory and visual stimuli) for a student with ASD are minimized as much as possible. For example, tennis balls can be used to cover the bottoms of chair legs to reduce classroom noise. Most classrooms in special schools in Zambia are not well structured to respond to the sensory needs of learners with ASD (Nyoni, 2012). For example learners with ASD are made to learn in the same classes with learners with other disabilities. This can make the teaching process difficult for teachers.

Finn (1998) in his research states that small class size is one factor that increases student engagement and promotes good behaviour in the classroom. Zuawsky (2003) adds that teachers in small classes pay greater attention to each pupil. Students in these classes experience continuing pressure to participate in learning activities and become better more involved students. Attention to learning goes up and disruptive behaviour goes down. In contrast, in a study by Daliwal from India found that even teachers with small classroom sizes complained that: teaching learners with ASD is stressful and frustrating because of behaviour challenges like; running away from class activities, spinning and screaming, which can be so involving for the teachers.

#### **2.4 Classroom Strategies in Supporting Learners with ASD**

Strategies for learners with autism are necessary to help increase learner achievement. Researchers, Carmargo *et al.* (2018) and Harrower and Dunlap, (2001) reviewed research-based strategies designed to help individual learners with ASD. Their strategies included measures to increase academic and social growth for all learners with autism. They concluded that antecedent procedures are related to a child's environment. Therefore, the procedures may include having desks arranged in a certain way, ensuring learners are seated among peer learners, manipulating part of the child's environment to induce a child's response or prevent and minimise challenging behaviours. The opportunity to prepare or instruct learners about the activity before hand helps to engage learners during lessons. This is called priming. It allows learners with ASD to preview information or activities before engaging in the activity (Wilde, Koegel, and Koegel, 2000)

Westwood (2004) stated that, the term 'differentiation' was often used to describe the adaptive approach in individual needs. It involves the use of strategies to accommodate individual differences among learners. Teaching learners with ASD requires adaptations in a number of areas. This involves modification of skills been taught, varying the environment to create an appropriate

setting in which to learn, changing of the actual content of lessons, and introduction of technology that meets their special needs (Haskell and Barret 1993, Kirk *et al.*1998). Biggie and best observed that since severity of autism varies greatly from child to child, it requires programmes that encompass individualized adaptations and differentiations of classroom learning activities.

Most special school teachers attempt to manage behavioural challenges and try to communicate these issues to parents. However, there are never any formal means to ensure that there are consistent strategies at school and at home (Efa, 2011). Before starting to work with a child with ASD, it is important that teachers understand the cause of behaviour and how best to manage the child's behaviour. According to Emerson (2001) many teachers stated that managing challenging behaviours in learners with ASD was difficult and that it was important to understand different strategies and how to apply them appropriately.

Researchers in Crosland and Dunlap (2012) reported that organizational strategies were relevant in preventing challenging behaviours and improving social and academic outcomes for learners with ASD. In their research, they expressed that successful inclusion of learners with ASD in general education classrooms could be challenging and require additional support particularly from the school management committee. For this reason, in their research article they provided information on trends in autism intervention and a review of research that had addressed individualized and systematic interventions for promoting inclusion. Their research highlighted management strategies that were implemented in handling such behaviours. These strategies, in turn, were helpful for our study. Thus our study explored the strategies used elsewhere and assessed how they would be used in the Zambian school settings. Further, the researcher sought to understand the level of effectiveness of these strategies in the local settings by observing how teachers in the three special schools managed challenging behaviours in learners with ASD.

Many countries have done research on teachers' experiences on challenging behaviour and management strategies in teaching children with ASD. Dhaliwal (2013) stated that to manage challenging behaviour in learners with ASD is harder for some teachers. Grindle *et al.* (2012) and Grossland and Dunlap (2012) reported that when teachers follow classroom management strategies it broadens the child's knowledge because learners are able to learn more appropriately from trained teachers who know how to manage challenging behaviour adequately. Thus the foregoing studies gave the current research a lot of ideas on some strategies that were followed by other

countries on special teachers and how schools can be improved for effectiveness in managing challenging behaviours in learners with ASD.

In consensus, La Vigna and Donnellan (2002, pg. 39) reported that, “The classroom behaviour of three autistic and severely handicapped adolescent learners was modified with exclusively non-aversive procedures such as differential reinforcement of competing behaviour, differential reinforcement of low rates of responding, stimulus control and information feedback. Throughout the school year all target behaviours, many of them severe, were eliminated or reduced to an acceptable level. When the procedures were phased out, the behaviour did not return nor did there appear to be a substitution of other behaviours. An acceptable level of classroom control was maintained for the year without resorting to the use of punishment.” According to Crone *et al.* (2004) the use of non-aversive techniques has been a relatively recent development. The effects may not produce such rapid and significant immediate suppression as punishment. It is therefore more convenient to resort to punishment; aversive procedures are more often used because teachers have little information about non-aversive alternatives. Alternatives to punishment include the development of proactive plans which consider a wide range of features from initial assessment, medication, rewards and reinforcers, ecological manipulations, direct treatment strategies and interpersonal factors.

#### **2.4.1 Positive Behaviour Support**

Horner *et al.* (2004) initially found that schools implementing a Positive Behaviour Support approach have encouraged an array of research efforts focused on improving school-wide social climate, defining links between social behaviour and academic accomplishment, and identifying the most efficient procedures for achieving durable reductions in violent and disruptive behaviours. This entails that academic achievement could impact students with ASD positively if students have the opportunity to learn and improve problem behaviours and thereby focus on academic learning tasks. Dodge (2011) stated that the key to effective Positive Behaviour Support (PBS) is understanding what the child with ASD was obtaining or avoiding by using the challenging behaviour. This is not to say that the person is necessarily using the behaviour to intentionally achieve purposes.

According to Dodge (2011), PBS was recommended as the best approach for managing challenging behaviours in learners with ASD in schools. This was a qualitative case study which sought to understand methods schools use to collect discipline referral data in schools. PBS is a more effective alternative approach that is learner-centred which teachers can use to understand and address environmental factors that contribute to a learner's problem behaviour as compared to using consequences to control inappropriate behaviours such as physical punishment or timeout. According to Bambara, Nonnemacher and Koger (2005) PBS encourages prevention, or changing problem environments, and teaching so that learners learn alternative means for addressing their needs. This approach encourages teaching tasks in the daily context so that the child learns the skill in the context in which it will be used. For example, teaching dressing after a Physical Education lesson, shopping, crossing the road, putting toys away after use, or changing shoes. Teaching should maximise the child's independence at school, home, in the community and in developing friendships (Scott and Nelson, 1999).

This approach though common in western countries can be used in Zambian special schools to respond to challenging behaviours in learners with ASD in a more supportive way. This also will help most teachers who are experiencing teaching learners with ASD for the first time because ASD is not as common as other disabilities hence managing challenging behaviours negatively can be so stressing to the teachers.

#### **2.4.2 Music Therapy**

Children with ASD have been reported to have difficulties with communication and social interaction. Music therapy uses music and its elements to enable children communicate and express their feelings. Music therapy uses singing, live music making and composition techniques to encourage people to engage in spontaneous and creative musical activities (Whipple, 2004).

Music therapy is based on the idea that all individuals have the ability to respond to music and sound and this can lead to positive changes in behaviour and emotional well-being. A study by Geretsegger and Mossler (2014) examined the short and medium-term effect of music therapy interventions for children with ASD. The finding of the study reviewed that music therapy may help children with ASD to improve skills in communication and social interaction, initiating behaviour and emotional reciprocity. Furthermore, music therapy enhances non-verbal

communication skills within the therapy context (National Autistic Society, 2017). According to researchers, using songs to begin and end classroom sessions, introduce learners and greeting, helps learners with ASD to shape the day and is good for learners who resist transition of activities. Music helps learners to find emotional outlets when anxious. It also helps them to express or respond to needs without restriction of expressive speech.

This study was insightful in that it demonstrated how music therapy improves the teaching of social and communication skills. Furthermore, the study highlighted some vital trends and benefits of using music therapy in the teaching and learning of social and communication skills. The use of music therapy can thus be considered as a strategy for teaching various skills to learners with ASD in Zambian special schools.

### **2.4.3 Structured Environment**

Learners with ASD require a structured supportive environment in which to learn and develop. Such an environment should be one which is without distraction and clutter. De Clerq (2006) provides some key guidelines on which an educational program specific for learners with ASD should be based. Firstly, learners with ASD require or work best in a structured routine. Consistency is important to quickly develop fixed routines in learners with ASD. Secondly, predictability; the learner with ASD needs to be able to anticipate and have some amount of control. Therefore, learners with ASD usually work well off a set of daily schedules with little variance. Thirdly, learners with ASD are visual learners and require visual aids to structure their day and assist them in learning.

Additionally, Rohrer and Sampson (2014) presented components for setting up a classroom for learners with ASD. These components include the physical arrangement of the classroom; the association of materials; schedules and behavioral strategies; visual strategies; goals, objectives, as well as lesson plans; instructional strategies; communication systems and strategies; communication with parents; and related services and other school staff. According to Rohrer and Sampson (2014), a well-designed classroom provides structure and informs children what learning is taking place. Further, Moffet (2000) believed that the environment in which the change takes place was very crucial to teacher self-efficacy, and self-efficacy has been regarded to be crucial in teachers' ability to manage stress and consequently manage student behaviour. If teachers don't

feel comfortable and enjoy what they are doing, then it will be very hard and challenging for them to manage student behaviour. This can hinder the process of learning. This shows that the teacher is a very important factor in determining the efficiency of the education system.

Further, Finn (1998) in his research states that small class size is one factor that increases student engagement and promotes good behaviour in the classroom. The American Educational Research Association (Zurawsky, 2003) reports that, teachers in small classes pay greater attention to each pupil. Students in these classes experience continuing pressure to participate in learning activities and become better, more involved students. Attention to learning goes up and disruptive and off task behaviour goes down.

#### **2.4.5 Assistive Technology**

According to the Ontario Ministry of Education, (2005), assistive technology is defined as any technology that allows one to increase, maintain, or improve the functional capabilities of an individual with special learning needs (Edyburn, 2000). The use of assistive technology helps learners to have access to learning opportunities that are interactive and interesting. Judge (2001) added that the application and adaptations open doors to previously inaccessible learning opportunities for many children with special needs.

Assistive technology includes highly technical (high-tech) computerized devices such as speech generating software, as well as less technical (low-tech) resources such as visual supports. Technology can be used by students to provide alternative methods to access information, demonstrate and reinforce learning, and interact with others. It can also be used by adults as a tool to support the teaching and learning process.

A research study investigating the use of assistive technology with students with ASD in British Columbia (Randle, 2005) used a survey to identify a wide variety of uses of technology that include supporting the following: written output, academic concept development, motivation, communication, and the development of social skills. The survey responses from school-based teams in a study on the use of assistive technology with students with ASD in British Columbia indicated that successful implementation of technology appears to depend on several factors such as; match between the technology and the student's need; positive attitude towards the student's use of technology to access learning; interest and comfort level of the teacher; reliable and timely

access to technical support when required; student comfort level in using technology with gradual introduction of new hardware and/or software, when required; and perseverance through problems and challenges (Randle, 2005). Randle's study was insightful in that it demonstrated how assistive technology improves the teaching of communication, social skills and other subject areas in learners with ASD. Furthermore, the study brought out some important factors that special education teachers should consider in the implementation of assistive technology as a teaching strategy for learners with ASD.

#### **2.4.6 Social Stories**

Social Stories, according to Downing and Earlies-Vollrath (2009) were developed in the early 1990s in response to the evidence that students with ASD were unable to read and interpret social cues, had difficulties recognizing another's perspective, and were deficient in identifying appropriate responses to social stimuli. Carol Gray, a former teacher, was considered to be one of the first people to integrate social stories in the school setting with the purpose of assisting students with ASD in social difficulties (Kokina & Kern, 2010). Ozdemir (2008) found proper implementation of social stories decreased the need for additional behaviour management, as well as, reduced disruptive behaviours for children with ASD. Social Stories are believed to appeal to parents, practitioners, and educators because of their strong practical rationale. Furthermore, the same social story can be useful in the classroom as well as at home. For example, a social story created to promote independence while washing hands after using the bathroom would be helpful in the classroom and at home. Kokina & Kern, (2010) and other researchers (Sansosti, Powell-Smith, & Kincaid, 2004) however, have argued that the effectiveness of social stories has yet to be supported because most learners with ASD have attention difficulties which can be a barrier during social stories.

#### **2.4.7 Play in ASD**

When teaching students with ASD the specific skills that they will need for various play activities and games, the students are accorded opportunity to enter into activities with a foundation of information and skills that they can apply to situations and to be as independent as possible. While many games appear to be simple, they are actually composed of fairly complicated sets of sub skills. Teaching the student to play a game may be most successful when done in a quiet, non-

distracting environment. The absence of pretend play in toddlers often indicates atypical or delayed development such as ASD (American Psychiatric Association, 2013). Research suggests that diagnostic features of ASD such as repetitive behaviours can narrow children's abilities to develop more complex play behaviours (Wetherby and Morgan, 2007; Rutherford *et al.* 2007; and Pierce 2011). That is, children with ASD can become rigidly fixated on continually performing a function on an object (spin wheels on a car) rather than using the object functionally (roll the car on the table) or symbolically (getting a 'wash').

Additionally, independent play in children with ASD has shown to be limited to the extent that children with ASD were once thought to have impoverished pretend play skills. In contrast, present research shows that children with ASD are capable of engaging in pretend play (Pierce 2011; Wolfberg 2009). With a more recent investigation of play skills in children with ASD, Pierce (2011) assessed exploratory, functional, and pretend play in young children with autism. This research found that children with autism engaged in more exploratory play in comparison to children who were typically developing and participated in more complex play behaviours. Additionally, children with ASD participated in fewer pretend and functional play behaviours compared to children who were typically developing. Blanc *et al.* (2005) suggest that because children with ASD are able to engage in complex play with provided structure and yet often display difficulty in spontaneously engaging in pretend play, it is essential to better facilitate these play behaviours.

Therefore, better guiding learners' play via scaffolding can have a global effect on their overall development given that play and developmental skills are known to have a reciprocal relationship (Stanley and Konstantareas 2007). Although directionality of this relationship is undetermined, recent research suggests that pretend play and language are related such that pretend play precedes early language development (Lillard *et al.* 2012). Moreover, complex play skills, like pretend play, require developmentally and socially appropriate skills to engage in such advanced play behaviours. In addition, scaffolding play skills of learners with ASD could mirror the social and developmental benefits shown in young children with typical development (Gleason 2002; Pierucci *et al.* 2014). Given the developmental and social gains that can be afforded through play, the goal of this study was to examine the influence of teachers scaffolding learners' play. Overall, the study aimed to highlight the experiences of teachers in teaching learners with ASD.

## **2.4.8 Reinforcement**

The target behaviour is encouraged through the use of reinforcement. The Ontario Ministry of Education (2007) states that reinforcement is provided after the target behaviour in order to increase the likelihood of that behaviour reoccurring. Reinforcers can be; tangible (such as toys); activity-based (the student is able to participate in a preferred activity); or social (praise or thumbs up sign). Reinforcement can be provided for displaying positive behaviours to encourage these behaviours to continue or for refraining from or reducing the occurrence of negative behaviours. It can be something provided (such as praise) or something removed (such as a non-preferred activity being removed when the student asks appropriately).

The use of rewarding appropriate behaviour with positive outcomes such as verbal praise, free time and prizes appears to be a regular happening in most schools. The response from the study revealed that rewarding the good behaviour allows the bad behaviour to diminish. However, the use of praise needs to be more nuanced than this. Praise only makes complete sense in a social context where both giver and receiver understand its meaning and are already in a relationship of mutual respect and trust. Janney and Snell (2006) encourage the use of learners' interest inventories to gain a better understanding of learners' motivations.

Pierucci (2014) states that natural rewards increase the chances that learners will use appropriate behaviour during daily activities. It is therefore advisable that teachers reward a learner with something that is related to what the child is doing or saying. For instance, if a learner sees a toy car and you prompt him to say, "car", the learner is rewarded by getting to play with the car. Consequently, the learner will be more likely to say "car" in the future. This is a more natural reward than if s/he was rewarded with a sweet for saying "car". Reinforcements must be motivating to the individual student. However, it must be noted that what motivates one student may not motivate another. Similarly, what is motivating to an individual student may change over time. Children with ASD are usually stereotypical and do not easily adapt to change, hence in trying different form of motivation this can be irritating for them due to additional sensory issues that come with ASD. This means that teachers will experience different responses from learners with ASD as they try to motivate them and need to look out for individual interests in order for motivation to be effective.

Teachers can as well use prompts to support learners with ASD in a school setting to teach understanding in communication and follow instructions (Janney and Snell, 2006). Teachers can also use new communication skills such as gestures, words, word combination or sentences in order to decrease inappropriate behaviours that a learner uses to get needs met. Examples of prompts include, time delay, asking questions, giving choices, modelling or physical guidance, and verbal prompts. Consider the level of prompting required for a learner. Different tasks will require a different level of support and use of natural cues whenever possible. For instance, handing the child his shoe with the laces loosened and the shoe opened for easy fitting or giving trousers and pants facing the right way. In addition, providing pictures, symbols and photos as prompts to choose from (Sabrina, 2016)

#### **2.4.9 Visual Supports**

The other common strategy is the use of visual supports. Visual supports can vary according to the ability of the learner to recognise and understand the connection between the visual and the intended message (Hodgdon, 1999). In order for visual supports to successfully help a student to learn, they must match the learner's level of comprehension. The goal of using visuals is to help a learner understand and convey information. Visual supports are helpful to many learners with ASD including those who are able to read efficiently. Visual supports can include checklists, choice cards, visual schedules, illustrated task sequences, videos and story illustrations, to mention but a few.

A research by Hodgdon (1999) demonstrated that the use of visual supports is one of the most widely recommended strategies for teaching students with ASD as they usually process visual information more efficiently and effectively than information that is presented verbally. Some students may require extra time to process verbal language and understand the message. Speech is transient; once information or instructions have been spoken, the message is no longer available and students must recall the information from memory. Visual images help students to understand information as they provide a source that can be referred to as often as necessary and for the length of time that is required in order to process the content of the information. When a child seems not to understand what the teacher is communicating or is getting bored with a lesson in an effort to keep them interested and focused, a teacher should introduce pictures or actions in the lessons.

Knoster and Llewellyn (2007) state that when we use toys, for most of the children they sit and play with the toys.

Other visual strategies can take the form of pictures, icons, photographs or gestures to enhance the understanding of spoken words. The use of visual systems can strengthen the child's understanding of communication in his or her environment (Peters, 1997; and Quill, 1997). The use of visual environmental support to mediate communication interaction supports understanding and provides a transient foundation essential for more effective communication. It builds on children's strengths rather than placing more demand on their area of greatest difficulty. When visual supports are used to give these children information and direction, children comprehension increases significantly (Hodgdon, 1999). In addition, Nance (2017) mentioned puzzles as one of the visuals that are educative and entertaining to children with ASD, as puzzles increase self-confidence, persistence, independence, concentration, social skills, sorting and eye hand co-ordination in children with special needs.

Grandin (1995:109), an autistic author, describes what it is like to be a visual learner. "I think in pictures. Words are like a second language to me. I translate both spoken and written words into full colour movies, complete with sound, which run like a tape in my head". Incorporating the child's preferences and special interests into the instructional programme helps learners with ASD to learn. The procedures used should take on the characteristics of being custom designed for each child thus allowing for individual adjustment within the package that meet each child's unique skills and needs. When a child is engaged, connection and interaction are occurring. Conversely, when he or she is not engaged, he or she is not available for learning (Hurth *et al.* 1999). With the increasing number of non-verbal learners in Zambian schools, visual support is a friendly strategy that teachers can easily adopt to enhance communication when teaching learners with ASD.

#### **2.4.9.1 Picture Exchange Communication System**

Picture Exchange Communication System is another visual support strategy that teachers can use to teach communication in learners with ASD.

The Picture Exchange Strategy to Communication was developed in 1994 by Andy Bond and Frost in America as an Augmentative Alternative Communication (AAC) system that teachers, children and adults with autism and other communication deficits can use to initiate communication. It is a

strategy that uses any picture drawing, photograph or any picture cut out of a news magazine. The user of the strategy initiates conversation or makes their needs known by giving a picture of what they want to communicate to another person. The person given or shown the picture will respond accordingly by providing that item to the child or adult who initiated the communication. The pictures that are used have a word or sentence written below so that the interpretation of the picture is the same to everyone. The strategy has received world-wide recognition for focusing on the initiation component of communication. It was created with educators, resident care providers and families in mind.

A study was done in Zambia by Mbewe (2016) who investigated the effects of picture exchange strategy on communication skills of children with autism using case study triangulation on learners with ASD aged between eight to ten years. The findings revealed that learners who were exposed to PECS reduced on challenging behaviour to communicate but used pictures to request for preferred activities. The researcher concluded that since Zambian learners with ASD learned to communicate using pictures, the strategy can benefit all individuals in the country who are non-verbal. Though this study was restricted to home based intervention, the findings can also be applied to classroom settings and teachers can use this strategy to enhance effective communication in learners with ASD in order to make teaching enjoyable; a limitation this study wishes to address.

Picture exchange strategy was created to teach functional communication with an initial focus on spontaneity. It continues to be implemented in various settings (e.g. homes, schools and communities) to enable the learners with ASD to acquire the skills to communicate their wants and needs. This method is easy to employ, it is easily adaptive and can be generalised across cultures and environments; which makes it appealing. According to Bondy and Frost, (2001) Picture Exchange Communication System is the exchange of a picture for requesting a reinforcing item. This is done by the child being shown a highly preferred item that is motivating. The child is assisted to pick up the correct picture of the motivating item and reaches toward the communicative partner, and releases the picture into the teacher's or trainer's hand. The picture exchange strategy does not require complex or expensive materials since it uses picture symbols as the modality. This makes it a suitable strategy for Zambian children especially those in poor localities and rural areas.

A study by Howlin and Gordon (2007) showed that many children introduced to picture exchange strategy as pre-scholars went on to develop speech. This means that the picture exchange method does not hinder speech development, making it a flexible strategy to those who have limited speech. Many studies have been conducted by different people in order to find out the effectiveness of picture exchange strategy in teaching communication to children with autism. In her book, *Thinking in Pictures*, Grandin (2006) elaborates the profound mysteries of autism where most autistic people have demonstrated the remarkable ability of exceling at visual spatial skills while performing so poorly at verbal skills. In addition, Hollins (2007) came up with books without words to enable individuals with autism to be able to tell their stories. Adkins and Axelrod (2000) conducted a study to examine the acquisition of communication skills by a child with pervasive development disorder. The subject was taught to request for preferred items using American Sign Language and the picture exchange method. The results showed that the child was able to request for more preferred objects by the use of picture exchange method than sign language.

#### **2.4.10 Task Analysis**

Task analysis involves breaking tasks down into smaller, teachable steps. The goals for each step are established, and task performance can then be taught according to these steps. Each subtask is taught and reinforced in sequence. In many cases, learners with ASD may have difficulties only with one step within a larger task, rather than with the task overall. McDonnell (2010) adds that it is important to write subtasks in terms of what the student will do and record interventions or prompts that are required for students to complete subtasks. Breaking tasks makes teaching easier for teachers and reduces the stress of trying to make learners understand big concepts hence experiencing teaching positively.

According to Grandin (1995), many learners with ASD have difficulty processing information and are unable to respond immediately and “on demand” to expected tasks. They often require flexibility regarding the timing and method used to demonstrate their knowledge and skills. Teachers will need to consider the various alternatives, such as extended timelines and additional activities that may need to be planned to ensure that appropriate learning experiences are provided for all learners.

#### **2.4.11 Differentiated Instructions**

The education for all policy of Ontario Ministry of Education (2005) recommends that teachers can effectively respond to a learner's needs and strengths through the use of differentiated instructions. Through this approach, the specific skills and difficulties of students with ASD can be addressed by employing a variety of methods to differentiate the content, process, teaching resources and class activities.

Many strategies are available to assist teachers differentiate lessons for learners with ASD to ensure they are receiving the optimum type of instruction required to become successful. Glandin (2006) admits that in the past special education teachers had a limited understanding of learners with ASD but in latter times it became helpful to use best practices to differentiate teaching strategies for learners with ASD. The lack of instructional materials and professional development programs for special education teachers were considered barriers to incorporating differentiated instruction for students with ASD in their classrooms. When teachers differentiate instruction, the classroom environment may be modified and made more conducive to learning, especially for students with ASD (Flynn, 2010). However, as some books were outdated, teachers were challenged, because of limited teaching resources for learners with ASD in schools.

The education for all policy of Ontario Ministry of Education (2005) recommends that teachers can effectively respond to a learner's needs and strengths through the use of differentiated instructions. Through this approach, the specific skills and difficulties of students with ASD can be addressed by employing a variety of methods to differentiate the content, process, teaching resources and class activities. The special education teachers need to develop classroom routines and procedures, motivate students' interests, and use visual organizers and strategy tools to differentiate instruction, incorporate structured assignments, and assess performance using task analysis to optimize learning opportunities for each student (Denning & Moody, 2013). This is cardinal because most students with ASD require some form of academic modification in classes regardless of intellectual ability (Wagner, 2001). Dahle and Gargiulo (2004) promoted the use of structured teaching approaches, integrating academic and learning accommodations tailored for learners with ASD.

Differentiation involves an ongoing process of monitoring student response to the differentiated strategies and evaluating student progress on a regular basis. However, strategies that are found to be effective for a student during one activity may be less effective over time or during another activity (Myles, 2009). The level and type of differentiation will need to be varied according to the student's response and progress. Data from assessments and observations should be used to inform decisions about the effectiveness of methods being used and further differentiation that may be required. To differentiate instruction, teachers should consider adaptations to the curriculum, instruction, or expectations that may be required according to a student's readiness, interests, and learning profile.

#### **2.4.12 Sensory Consideration**

Students with ASD vary in their sensitivity and tolerance to sensory stimulation in the environment. Therefore, it is important to be aware of the sensory preferences or sensitivities of a student and to determine possible elements in the environment that might have an impact on a student's learning and level of anxiety. Some students are very ("hyper") sensitive in one or more sensory areas and may be more comfortable in environments with reduced levels of sensory stimulation (McDonnell, 2010, Ben-Sasson *et al.* 2009 and Lane *et al.* 2010).

Other individuals are under ("hypo-") sensitive and seek enhanced sensory experience. For example, some students become anxious or upset because of an extreme sensitivity to certain sounds or have difficulties in processing more than one sense at a time. Other students seek additional sensory experiences in order to become or maintain calmness. Sensory differences in individuals with ASD are increasingly being reported by researchers. A US study of 104 individuals diagnosed with ASD matched with a control group of individuals with ASD, identified differences between the two populations (Kern *et al.* 2006). The authors used the sensory profile in their study and found that there were differences in auditory, visual, touch and oral sensory processes.

Compared with the western countries with trained professionals, better access to child care facilities and available intervention services, African children are seriously under-served and have limited access to the few available child health care facilities (Bakare *et al.* 2009; Bakare and Munir, 2011). Documented benefits of early identification of ASD include early entry into

appropriate treatment programs with the aim of improving developmental outcomes such as language, social, cognitive and motor skills.

## **2.5 Summary**

This chapter reviewed literature related to the study on the experiences of teachers in teaching learners with ASD. It further attempted to bring out information relating to the background of Autism, prevalence worldwide, in Africa and particularly in Zambia. Further, the literature looked at teacher knowledge on ASD and its importance in supporting learners with ASD in schools. The chapter thus demonstrated that challenging behaviour in children with ASD leads to a number of issues. These issues include elements that pose danger to the individual and others in the vicinity and also lead to experiences that may help or devastate the individual with ASD and the teachers. Further, it brought out some of the strategies teachers can employ in supporting learners with ASD such as PBS, structured environment, and visual and social stories. Most of the studies in the reviewed literature encouraged the inclusion of learners with ASD in mainstream schools, which is not appropriate for learners with ASD because the disorder affects children's sensory needs hence can be so destructed in an inclusive learning environment and this can be so challenging for the teachers as they try to support learners with ASD.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Overview**

This chapter presents the methodology that was used in the study. The chapter also includes the philosophical assumption, research design, population, sample and sampling techniques that were employed in the study. It further explains the research instruments, data quality assurance as well as data collection and analysis procedures. The last section of the chapter looks at ethical considerations.

#### **3.2 Philosophical Assumption**

The study adopted the Social Constructivism Worldview advanced by Mannheim. The study was also informed by Berger and Luekmann's (1967) Social Construction of Reality; Lincoln and Guba's (1985) Naturalistic Inquiry. The assumption of the social constructivism worldview is that individuals understand the world in which they live and work as they develop subjective meanings of their experiences towards certain phenomena. These meanings are varied and multiple thereby leading the researcher to investigate complex views as opposed to few ideas. The researcher operating on this worldview constructs the truth based on participants' views of the situation being studied (Crotty, 1998). This provides a concrete platform for participants to construct the meaning of a situation through experiences in a general and more open-ended questioning.

From the aforementioned insight, the researcher made the questions general and open-ended so as to carefully listen to participants' experiences by using interviews and non-participant observation. It is from this view point that the experiences of teachers in the teaching of ASD learners from the three sampled special schools in Lusaka District were appreciated during the research process.

#### **3.3 Research Design**

Kombo and Tromp (2006) define research design as a glue like structure that holds all the elements in a research project together. Orodho (2003) defines it as the scheme, outline or plan that is used to generate answers to the research problem. This study utilised a phenomenological research design, specifically interpretative phenomenological research design. According to Creswell

(2013) a phenomenological study is used when all participants have experienced a phenomenon having the same meaning for all participants. Thus the experiences of the participants regarding the phenomenon are explored in the study. In the same vein, Creswell (2009) states that such a design is used with the intention of conducting a direct exploration, analysis and interpretation of a particular phenomenon emphasising the richness and depth of participants' experiences.

Using interpretive phenomenological research design, the researcher was able to tap into teachers' classroom experiences regarding the teaching and learning behaviours of ASD learners by applying the principle of "epoch" of their own experiences thereby taking the information as it came from participants through verbatim reporting. The design appropriately guided the generation of interpreted information on classroom shared experiences. This design was appropriate for the study because it sought to solicit information and investigate the experiences of teachers in the teaching and learning of ASD children in selected special schools in Lusaka District.

### **3.4 Sample Population**

Population is defined as a group of individuals and/or objects from which samples are taken for measurement (Kasonde-Ng'andu, 2013). The criteria for selecting each participant was that they should have had certification in special education; were supposed to be highly qualified in their subject area; and should have been teaching at least two learners with autism in their classroom. In addition, all participants should have been employed by the Government and must have had at least five years of teaching experience. The researcher attempted to create gender equity among the participants. However, it was difficult because the majority of special education teachers were female. Hence gender was not a prerequisite for participation in this study. The researcher asked departmental supervisors to recommend teachers of learners with ASD, who met the set criteria for the study.

### **3.5 Sample Size**

Sample size refers to the number of participants selected from the population.

**Table 1: Demographic Characteristics of Respondents**

Gender	Frequency
Female	11
Male	1
Total	12

A sample size of twelve (12) teachers, eleven (11) female and one (1) male was selected for this study. Mays and Pope (2001) suggest using small sample sizes because information gathering methods are comprehensive and allow participants to give more detailed answers. Hatch (2002) adds that small sample size allows the researcher to get rich information from the participants in the study. Most of the participants six (7) were between the age group of 31- 40, followed by four (4) the age group of 41-51. And two (2) of the teachers were in the age range of 20-30.

### **3.6 Sampling Procedure**

The study employed purposive sampling which involved purposely handpicking individuals from the population based on the researcher's knowledge and judgment (Msabila and Nalaila, 2013). This involved selecting of teachers who were experienced with the teaching and learning of learners with Autism in special schools. Orodho and KomboS (2002) states that the power of purposive sampling lies in selecting rich information for in-depth analysis related to the central issues being studied.

Further, the researcher applied convenience sampling to select the three special schools. This method has the advantage of enabling the research to select participants based on their accessibility and proximity to the researcher (Msabila and Nalaila, 2013).The researcher choose the three specific site for the study, knowing that the special schools also cater for learners with ASD. Hence, the researcher used both purposive and convenience sampling techniques.

Black (1999) observes that purposive sampling ensures that those people who are unsuitable for the sampling study are already eliminated so that only the most suitable candidates remain. This

implies that the results of purposive sampling are usually expected to be more accurate than those achieved with an alternative form of sampling (Orodho and Kombo, 2002).

### **3.7 Research Instruments**

The research study used a semi-structured interview guide and non-participant observation check list, to collect data.

#### **3.7.1 Semi-Structured Interview Guide**

Interviews are questions asked orally (Kombo and Tromp, 2006). One to one interviews were used to collect data from teachers on the basis that qualitative inquiry usually yields in-depth data. It was from the thick description that the researcher was able to understand teachers' experiences towards the teaching of learners with ASD in special schools. Kombo and Tromp (2006) stated that semi-structured interviews are based on the use of an interview guide which is a list of questions or topics to be covered by the interview. Semi-structured interviews are flexible because they consist of both open and closed-ended questions. They are important because they gather in-depth information which gives the researcher a complete and detailed understanding from open-ended questions. Therefore, using semi-structured interviews enabled the study to holistically get first-hand information from teachers about their experiences in teaching learners with ASD.

#### **3.7.2 Classroom Lesson Observation**

The researcher also employed a non-participant observation method in order to witness and capture teaching and learning activities as they took place in the natural setting (sampled schools). Non participant observation is a technique whereby the researcher watches the subjects of his or her study without getting involved, but observe and note down anything that stands out (<https://www.encyclopeadia.com/social-sciences/dictionary>). This was done through lesson observations in classrooms with minimal lesson interference for a period of five months. Every lesson was observed for 30 minutes on different days. The aim was to capture events and experiences in their natural setting or context (Yin, 1991). Teachers were observed while they were teaching learners with ASD with their challenging behaviours at play and the strategies used to support learners. This allowed the researcher to have access to the school environment of the

three participating special schools (Kothari, 2011). Lesson observations helped to secure the validity of the study.

### **3.8 Data Quality Assurance**

Data quality assurance is the process of data profiling to discover inconsistencies and other anomalies in the data as well as performing data cleansing, for example, removing outliers to improve data quality (<https://en.m>). A pilot study was conducted at Chainama Special School to field test the interview questions and the observation checklist. This was done by asking 3 teachers, with at least three learners diagnosed with ASD, to be interviewed and observed. The purpose for the pilot study was to determine if the research instruments would produce the type of response for which they had been developed.

The researcher discovered that the interview questions were mixed up and were not categorised according to research objectives. Additionally, some questions were ambiguous making it difficult for the teachers to understand. For example, “how trained are you to teach learners with ASD?” and, “How do you view learners with ASD?” Afterwards, the researcher had to categorise and paraphrase the questions for easy understanding by the respondents. Thus the pilot study was useful in determining whether changes were needed on the interview questions before beginning the interview process. A trained transcriptionist transcribed the face-to-face qualitative interviews then the researcher sent the transcripts to participants for member checking.

### **3.9 Data Collection Procedure**

Data collection is the gathering of specific information aimed at proving and refuting some facts on how a researcher collects data and with what instruments (Kasonde-Ng’andu, 2013). Therefore, in trying to follow the data collection procedure, an introductory letter (Appendix 1), was sought from the University of Zambia to allow the researcher to go for data collection and written permission was sought from the District Education Board Secretary (DEBS).

At the participating schools, verbal permission was obtained from the head teachers to use their facilities before proceeding with data collection. After permission was granted, semi-structured interviews were conducted among teachers on different days in order to collect data. However,

before collecting data from the participants, the aim of the study was thoroughly explained to them and assurance was given that data collected was purely for academic purposes.

During data collection, a voice recorder was used to record the conversations to capture the opinions and views of the participants in order to help transcribe them from voice to ink messages for data analysis. When this was done, the researcher then categorized the statements and summarized them in narrative form. Respondents were assigned pseudo names, letters A-L for easy identification of participants. Thereafter, a report was written on each of the 12 teachers interviewed from the three selected special schools. Further, observations were made by the researcher in the natural classroom environment in order to understand how the teachers experienced teaching learners with ASD and how the strategies affect the teaching and learning process in class rooms.

### **3.10 Data Analysis**

Gall *et al.* (2007) defines data analysis as a process of examining case study data closely in order to find contracts, themes, and patterns that can be used to describe and explain the phenomenon under study. Kasonde-Ng'andu (2013) describes data analysis as a manipulation of the collected data for the purpose of drawing conclusions that reflect on the interest, ideas and theories that initiated the study so as to uncover the underpinning structures and extracting cardinal variables thereby testing any underlying assumptions.

Data was analysed using Interpretative Phenomenological Analysis (IPA). This method of analysis involves the researcher to categorise the collected data and generate themes from it in line with the objectives of the study. IPA encourages an open-ended dialogue between the researcher and the participants and may, therefore, lead the researcher to see things in a new light. After transcribing the data, the researcher works closely and intensively with the text, annotating it closely ('coding') for insights into the participants' experience and perspective on their world. As the analysis develops, the researcher catalogues the emerging codes, and subsequently begins to look for patterns in the codes. These patterns are called 'themes'. Themes are recurring patterns of meaning (ideas, thoughts, feelings) throughout the text. Themes are likely to identify both something that *matters* to the participants (i.e. an object of concern, topic of some import) and also convey something of the *meaning* of that thing, for the participants (Smith and Eatough, 2006) argue that

the IPA method is a suitable approach to analysing qualitative data when one is trying to find out what experiences individuals have towards a particular situation they are facing, and how they make sense of their personal and social world. The method is especially useful when one is concerned with the complexity, process and novelty of a phenomenon; in this regard the teachers' experiences in teaching of learners with ASD. Therefore, the analysis of raw data enabled the researcher transform it into meaningful information.

### **3.11 Ethical Considerations**

Ethical issues were highly upheld in this study. First and foremost, a clearance letter was obtained from the Ethics Committee of the University Of Zambia Directorate Of Research and Graduate Studies see (Appendix 4). Permission was also obtained from relevant authorities namely, the District Education Board Secretary (DEBS), school managers and participating teachers. Participants were not forced but were requested to willingly participate in the study see (Appendix 1). They were also given assurance that the data collected would be kept confidential and only be used for research purposes. Furthermore, the researcher assured the participants that names and personal details would not be revealed or published. Participants were represented by pseudo names. This ensured anonymity. Voluntary participation by the teachers was preceded by explaining to them the procedure, relevance and purpose of the study.

Ultimately, the researcher took full responsibility of the study and any unforeseen consequences it could attract. All the mentioned activities were done in order to ensure that the rights of the participants were respected and their dignity as human beings was safeguarded. Cohen *et' al.* (2000) backed this up by stating that ethical issues are matters which are highly sensitive to the rights of others.

### **3.12 Summary**

This chapter discussed the methodology that was employed in this study. Under methodology, the following items were captured; philosophical assumption, the research design, target population, sample size and sampling techniques, research instruments, data quality assurance, data collection procedure, data analysis and ethical issues. Having presented the above, the next chapter presents the findings of this study from the three sampled special schools.

## **CHAPTER FOUR**

### **PRESENTATION OF THE FINDINGS**

#### **4.1 Overview**

The previous chapter outlined the methodology which was employed by the researcher to come up with data by means of the stated research instruments. This chapter presents the findings of the study as was provided by the participants. The findings were deduced from data which was collected using face-to-face interviews and observation check-list. The researcher analyzed the data using descriptive tables and narrative presentations. Respondents were referred to using pseudonyms to maintain their anonymity. The chapter presents the findings in line with the study questions which were as follows:

1. What knowledge do special teachers have on ASD?
2. What challenging behaviours do teachers face when teaching learners with ASD?
3. What classroom strategies do teachers use in supporting learners with ASD?

#### **4.2 Teachers' Knowledge in Teaching Learners with ASD**

The study deemed it necessary to find out the knowledge of teachers in teaching learners with ASD. Thus in terms of knowledge, a number of characteristics were considered, for example, the qualification levels of teachers and their specialisation, teachers' understanding of ASD in relation to the definition and features, years in service and any continuous professional development training in ASD. The level of knowledge among special education teachers was of great value due to the growing numbers in the diagnosis of ASD in schools and the various challenges that come with it. Hence, teachers were expected to have the right knowledge and perception in order to support the learning process of learners and respond to their individual needs.

##### **4.2.1 Teachers' Qualification**

All the participants in the study had received formal training in special education but had little specific skills in teaching of learners with ASD. The findings revealed that out of the twelve (12) teachers, eight (8) had first degrees in Special Education, while three (3) had diplomas in Special

Education and one (1) had a certificate in Special Education. None of the participants had a master's degree qualification.

#### **4.2.3 Duration in Special Education Provision**

To find out how long the teachers had been in the teaching service, they were asked the number of years in active service. The findings revealed that two (2) teachers had worked as special education teachers between the ranges of 5-10years, while six (6) were the majority with work duration ranging from 10-15 years. The longest serving teachers were four (4) with 15-20 years in the teaching service. This demonstrated that the teacher participants had worked in the field of Special Education for a reasonable duration and had personal experiences of teaching learners with ASD.

#### **4.2.3 Continuing Professional Development**

The research question asked the teachers if they had received an extra training to learn on ASD. Only four (4) teachers confirmed that they had attended workshops on ASD organized by visiting professionals from outside Zambia, while eight (8) teachers had not attended any workshop on ASD but reported that they learned of it from friends and through interaction with learners with ASD in class. The findings of the study further showed that few teachers had extra expertise in teaching learners with ASD and teachers wished for more training in schools in order to respond to the needs of all learners.

The teachers were also asked if they had learners with ASD in their classrooms and to state the number and sex. This was important in order to ascertain the extent to which the teachers experienced the phenomenon of teaching learners with ASD and the growth of the diagnosed population in special schools.

Table 2, shows the prevalence frequency distribution of learners in each classroom using the diagnosis reports from medical doctors and a multidisciplinary team of different professionals, consisting of therapists, teachers, doctors and assessors. This study had to rely on the observations and judgements of the researcher or a previous diagnosis as to whether or not the children included in the study had autism. The previous diagnoses were from the University Teaching Hospital centre of excellence. The doctors had diagnosed all the children in this study to have autism.

**Table 2: Distribution of the Prevalence of Learners with ASD in each Classroom.**

<i>TEACHER</i>	<i>GRADE</i>	<i>GIRLS</i>	<i>BOYS</i>	<i>TOTAL</i>
A	Pre	1	6	7
B	2	Nil	4	4
C	3	Nil	8	8
D	5	3	7	10
E	1	2	3	5
F	1	4	4	8
G	7	1	5	6
H	4	Nil	3	3
I	3	Nil	5	5
J	7	2	3	5
K	Pre	Nil	2	2
L	2	1	6	7
TOTAL		13	48	61

**Source:** Field Work (2018)

From the table , teacher D had ten (10), the highest number of learners with ASD, followed by teachers C and F with eight (8) learners, then teachers A and L with seven (7) learners, and teachers with a small number of learners were teachers: H, K, J, I, G, E, and B with 2 – 6 learners in their classrooms. It can thus be concluded from this prevalence that ASD exists and is more common in boys than in girls. The prevalence of learners with ASD in the classrooms helped the researcher to determine how teachers experienced the teaching of learners with ASD in their individual classroom settings (see Table 2 above).

When the teachers were asked to define and describe Autism. The researcher observed that, teachers had difficulties defining Autism but were fast to describe features associated with ASD in their own words. This was after the researcher introduced the meaning.

Responding to the question on training and definition of Autism, teacher 'A' stated:

*“I just had some orientation workshops just within the school setting itself. Not necessarily having a training that I have not done. And I would be happy or would feel grateful if we would have such workshops where teachers would be called to further train on how to handle children with autism. Because certain things we just learn them as we see them, how they relate with other children, with us teachers and the environment then we try to just see maybe here I can help this child in one way or the other. But if someone can come in to give us proper information on how best these children can be treated or they can be taught would be a very good thing for us teachers here.”*

Further, another, teacher 'D' reported that:

*“I can say yes. We do some workshops as special education teachers. I have attended some workshops that have been talking about how you can handle children with autism plus other disorders. In my own understanding, Autism is a disorder which is very difficult to understand.”*

Teacher 'E' added:

*“Autism affects communication as well as the social aspect of a child leading to miscommunication between the child and those people around. Usually these children have a problem in terms of communicating. One thing they want to do is to let you know that they need attention or sometimes they want food and if you don't give them quickly, they either start beating you or just grab the food itself or even shout or cry on top of their voices or hit themselves against so many things around.”*

In response to the same question, teacher 'B' explained:

*“In my own understanding, autism is an intellectual disability that is characterized by a number of features. Like children have difficulties with communication, social skills, interaction with other people. They mostly like keeping to themselves. Some of the features are that they usually repeat what is said to them. For instance, if you ask them, “How are you?” they will say it back to you. They are usually those learners who are hyper active sometimes they tend to be violent.”*

Another respondent, teacher 'C' stated:

*“This is a type of disorder where children are not able to pay attention to what the teacher is teaching them in class. In layman’s language the social aspect may be good depending on the situation of the child at hand. The major features I have noticed are that they throw tantrums. That is the major thing I have observed in children that are autistic”.*

The findings also revealed that the teachers had difficulties defining Autism but were able to describe features associated with learners with ASD. However, this was an indication that their knowledge was limited. Teacher 'A' put it as follows:

*“Autism is a disorder in which learners display different characteristics which are very challenging and difficult to handle. However, features associated with autism are not very specific and clear. This is so because learners or rather a child with autism exhibits different characteristics or behaviour at every given time. They have a problem with communication and socialisation. These are key features that you find in learners with Autism that are very difficult. Mainly it is communication and socialisation. I once attended a workshop that trained me on how to play with learners with Autism by people from America.”*

Teacher 'D' added:

*“Autism is a term that describes children who are retarded and violent. One of the characteristics they have which is easily noticeable in many is [that] they are unable to sit at one point. You would talk to them and request them to sit with you but they would just sit for a while. Not even a minute would pass before the child moves to the other side, touching different things at different points. They are just in their own world. They do things as they want not as you direct them. Following instructions is something that is a challenge that I have noticed in these children. They don't follow instructions unless they want to do so. If the child does not want, he will not do it or she would not do it.”*

Regarding the question of having attended training on how to handle autistic learners, teacher 'D' reported that:

*“I can say yes. We do so through workshops as special education teachers. I have attended some workshops that have been talking about how you can handle children with autism plus other disorders. In my own understanding, Autism is a disorder which is very difficult to understand.”*

However, only 4 teachers had received short training through workshops as in-service teachers, on how to handle learners with ASD. Teacher 'L' reported that:

*“I’m not trained but if there is a real training for teaching learners with Autism. Just see when I was pursuing my certificate training, my friends and I are not trained on how to handle learners with Autism. Only things like Sign Language and Braille were taught in detail. Even when I upgraded to diploma level, it was the same training and so the same experience.....”*

#### **4.3 Challenges experienced in the teaching of learners with ASD.**

The following were some of the definitions that teachers mentioned, when asked what they understood by the term challenging behaviour:

- *Challenging behaviour is the portrayal of behaviour which is not easy for you to control.*
- *Challenging behaviours are those behaviours which are very difficult to handle.*
- *Challenging behaviour, this a behaviour which you are unable to cope with it as you are in a learning situation.*

In addition, teacher 'F' gave the following verbatim:

*“It’s been a bit challenging, a bit interesting. Challenging in the sense that mostly when you want to teach a class, for instance, in my class there are pupils that have different disabilities, those who have autism and those who do not. At times they are difficult to handle when they become violent. They cannot do an activity for a long time. They have a short concentration span. It’s difficult for them to socialise normally they are just isolated from their friends”.*

Teacher 'G' stated that:

*“For instance, if you are teaching a class with multiple disabilities and some of them are autistic, it’s difficult because they can’t concentrate on a topic with their friends, meaning you have to teach them individually at their own time which is time consuming and interesting again in the sense that when you give them tasks individually, like if you are teaching them alone, you find that they do so much better especially on tasks that have pictures.”*

Additionally, teacher 'H' suggested:

*“Challenging behaviour becomes very difficult to handle especially when children are not getting the instructions due to communication breakdown between the teacher and learner in the way you want them to do things, to carry*

*out something and also because they become stressed and then you don't understand each other. You may even get angry and maybe think of beating them if you are trying to ask them to do something else and they want something that is totally opposite in the classroom. For instance, if you are teaching in class, this child will just want to scream or jump because the task is a bit challenging."*

Teacher 'D' mentioned the following:

*"If there are 10 pupils in a particular class and 3 or 4 are autistic, you have to make sure that those that are not autistic are also learning together. It is difficult to teach them because most of the time is spent on controlling unwanted behaviour and the numbers are too big to be handled by one teacher."*

Consequently, teachers mentioned that they were constantly being disrupted during their teaching time. This was observed during lesson sessions. The researcher observed that learners became anxious and physical when they were not kept busy by the teacher and when they wanted something. Teacher 'I' thus reported the following:

*"You cannot do one thing as you expect with a child because of violent behaviour which is so irritating. You want to engage a learner to concentrate on one thing, the next minute they are already doing something else. So it is very challenging in that they will not pay attention to any given task you want to engage them in for a very long time. So you really have to concentrate and whilst you let them get interested in the activity."*

Teacher 'I' went on to propose that:

*"We normally have challenges in teaching these learners because they cannot concentrate for a long time. They tend to be violent if you do an activity for a long time. We tend to give them different activities. However, more of the challenge is that they are no particular materials that are given for these children. We just modify what we already have in stock for an ordinary child because there is no curriculum for learners with autism."*

In addition, teacher 'J' felt that:

*"Like in the classes you have a lot of children, sometimes with different disabilities in a class. So it's a challenge to handle them because of communication difficulties. You want to explain one thing and a child with autism will want to do something else or maybe you have 5 children with autism and they all want to do different things at the same time. It is confusing preparing different activities. I just give them the same activities."*

Teacher 'D' stated the following:

*"We have a pupil, if you are telling her to go and do something; she will not go and do it. But she will only do it when she wants to and she will only speak when she wants to speak. Sometimes she can come here to school and not say a word or express any needs the whole day. Some other days when she comes you will find she is even able to mention your name, teacher....., you even get surprised. Otherwise it's not something easy to handle these children."*

Teacher 'K' revealed that:

*"Because of these challenging behaviours, most of the pupils are limited in learning in the sense that learning will not take place as you are expecting as a teacher. You can put up a lesson plan and objectives saying I want to achieve this with this child today, then you find that the child is in another mood and is doing something else and at the end of the day you would have not achieved that objective. It has gone to the drain so you need to repeat it. You would have gone a step ahead if the child had responded but the child has failed, it means it's a drawback."*

Further, the study found that physical aggression is another type of challenging behaviour that children with ASD exhibit in their daily lives. Most of the teachers attested to this challenging behaviour in their classrooms. To authenticate this finding, teacher 'K' stated that, *"Some teachers had to leave their job and get another one after some time as they find the physical aggression to be very challenging to manage and also they have no or poor support from the school management"*.

The researcher also observed that learners with ASD showed feelings of frustration and anxiety when they were ignored as they tried to communicate their needs. Teachers struggled to understand their learners and learners did not intuitively understand their teachers. It was all confusion in some of the classrooms because teachers struggled to make order during lessons.

Another challenging behaviour exhibited by children with ASD as reported by two teachers was self-inflicted pain such as a person hitting their head or biting themselves which could lead to tissue damage.

#### 4.4 Teaching Strategies Used by Teachers in Supporting Learners with ASD

Teachers were asked to state the classroom strategies they employed to support learners with ASD in order to attain effective teaching and learning. The findings revealed that six teachers mentioned appropriate strategies on how to support learners with ASD, for example, music, pictures, identifying learners' interest, adaptation of learning content and rewarding. The other six were not sure of what to do but tried to explain how they support learners with ASD. Based on this, teacher 'L' stated that:

*“In order to come up with practical teaching strategies, as a teacher I ought to first identify the child's interest to help them learn. For example, learners as we said have different behaviours at any given time because they have different interests and their interests vary. So you capitalize on what the child wants or shows interested in at a given time because tomorrow they will not do what they doing today.”*

The teachers reported that rewarding good behaviour allowed bad behaviour to diminish. During the study, learners who were rewarded for behaving well enjoyed learning and responded favourably to instructions with laughter or a smile while performing class activities. Teachers who did not reward their learners received negative expressions such as avoidance, tiring of books, biting and crying.

Teacher 'L' went further to say: *I reward them when they engage in the activity. From what the child is interested in at a particular time, is where you also engage and try to teach the learner new things.”*

Adaptation strategy was another teaching measure that the teachers were utilizing. The researcher observed that teachers used their own initiatives to try and adapt teaching resources to individual needs and differences. However, this was observed to be quite stressful for the teachers. For example, moving work from text to picture and from picture to real tangible work which would be in accordance with the learners' interest. For instance, one teacher was teaching numbers using water and floating shapes of numbers because the learners love water. To support this finding, teacher 'B' gave the following remarks:

*“I usually modify my methods to make the lessons more applicable to the learners and interactive. Such creative methodologies make them enjoy the activities and visual pictorials. Teaching aids attract these young people to the lessons and while having that sort of fun, they are learning madam. As special schools we follow the same curriculum as that of typical learners so everything has to be modified.”*

Further, Teacher C stated that:

*“Like those learners that cannot settle in one place and then they have speech difficulties you will try to lock the room where you are teaching these children and then classrooms are being designed in such a way that each classroom has a toilet which those particular learners can use other than you letting them go out to a toilet somewhere far from the classroom. You may lose some children because we have a road nearby our school. So we try to prevent accidents like motor accidents or even them children being involved in an accident outside as they play with water because there are some children who like playing with water at the tap. So if you make them go out and maybe the teacher on duty has no idea that this child is outside. Such accidents can happen.”*

The study further revealed that music and stories were also strategies that were frequently used by teachers. These strategies were observed by the researcher during lesson observations. Music was used in the schools during circle time and in every subject area to stimulate learners’ attention and for language develop. Learners were seen and heard vocalising rhythms of songs. The study revealed that music and stories were liked by the children with ASD and it could make them stay still and concentrate on what teachers were teaching. To support these strategies, teacher ‘E’ had this to say, *“We normally give them music therapy and we also find time to give them work through music according to their abilities”*.

With regards to the above, teacher ‘L’ went further by reporting that:

*“I will just talk from my experience. First I had this child who used to walk outside the class. Most of the time we would not make him sit, so we just came up with a strategy of just bringing him back in the class. Whenever he went out we would follow him outside bring him back in class and made him sit. We saw that he liked music so we started playing music and singing a lot during lessons, this made him to sit but again it was too much he never did anything else apart from the making rhythms of songs so we wanted to bring something in again new. Anyway it has been tough. Music is fun, and inexpensive. They help him to be attentive and concentrate.”*

Teacher 'F' added that:

*"We give them a task that will keep them busy for a longer period of time for example puzzles; so that they limit themselves in doing all those tantrums you are able to see at the end of the day. We do not have teaching resources for these learners and the textbooks are not applicable for learners with ASD. It is a challenge for us teachers."*

Furthermore, teacher 'H' reported that:

*"What I have observed with children with autism is that unlike general belief, they hear what you say. So if you look at them sternly or you are forceful they will get what you mean. If you tell them don't do this and you are serious about it they will get it but if one entertains the behaviour, he or she will just behave anyhow. So sometimes they know. You have to tell them no but do it lovingly. Again I have observed that they hate being shouted at. So if you shout and say don't do this you will make the behaviour worse. But if you say don't do this but they look at your face and you are serious but again you charm them, they will understand what you are trying to communicate. So verbal warnings work for me."*

Additionally, teacher 'G' contributed by stating that:

*"Sometimes you give them time out or like you give them verbal warnings. After sometime when you are done with other pupils then you can concentrate on them but mostly it's just giving them time out."*

Teacher 'E' gave the following observations:

*"We give those children toys and instruct them accordingly. Giving learners instructions has not been easy because Autism affects them differently. We do not have text books on how to differentiate work so it is difficult to meet the needs of the learners. Some love music, some love cars. So we give them things to play with so that they can settle at least for a few minutes in one place."*

Teacher 'A' added the following:

*"I know that when I use toys most of them sit and play with the toys. At least you manipulate their behaviour in that way and also use interactive methodologies"*

*for creative activities that will make them enjoy the activity and visual pictorial issues. Teaching aids attract these young people to the lessons.”*

Safely locking them in class was another teaching strategy which was reported by teachers in the study. Teacher ‘C’ reported that:

*“Like those that cannot settle in one place and then they have speech difficulties you will try to lock the room where you are teaching the child and then classrooms are being designed in such a way that each classroom has a toilet where that particular classroom can be able to go in other than you letting them go out to the toilet somewhere far from the classroom. You may lose some children because we have a road nearby our school. So we try to prevent accidents like motor accidents or even them children being involved in an accident outside as they play with water because there are some children who like playing with water at the tap. So, if you make them go out and maybe the teacher on duty has no idea that this child is outside. Such accidents can happen.”*

#### **4.5. Summary**

The Chapter presented findings from semi-structured interviews and observation of lessons in the classroom setting using an observation checklist in order to verify the challenges and strategies experienced in teaching learners with ASD. Data was presented according to experiences of the twelve (12) teachers working in special schools with grade configurations ranging from grades one to seven. Each of the teachers had at least more than two learners diagnosed with ASD in their classroom at the time of the study. All the teachers were formally trained in Special Education but had no extensive specialized training in teaching learners with ASD. Only a few had attended professional development workshops regarding ASD. The major challenges faced by the teachers and learners in the teaching of learners with ASD included; learners lacked concentration; exhibited aggressive behaviours; lacked verbal communication; there were no uniform stipulated teaching instructions; some learners were hyperactive and would throw tantrums; there was also over enrolment, and mixed disabilities in classes.

## **CHAPTER FIVE**

### **DISCUSSION OF THE FINDINGS**

#### **5.1 Overview**

This chapter discusses the findings of the study. The study investigated the experiences of teachers in teaching learners with ASD. The discussion is guided by the objectives of the study which were as follows:

1. How much knowledge do special education teachers on ASD?
2. What challenges do special education teachers experience in teaching learners with ASD?
3. What classroom strategies do special education teachers use in supporting learners with ASD?

#### **5.2 Teachers' Knowledge on ASD**

To begin with, it was imperative to know teachers' qualifications in order to ascertain whether they held correct credentials and had adequate knowledge and skills to teach learners with ASD. In line with this, it came to light that eight of the teachers had first degrees in Special Education, three had diplomas in Special Education and only one had a certificate in Special Education. This entails that these teachers were formally qualified to teach learners with special education needs including those with ASD. In support of this, Yang and Rusli (2012) stated that Special Education teachers' training level is vital in the identification and implementation of suitable instructional strategies for learners' success and development. The research observed that teacher qualification and training is key in service provision especially for learners with ASD. Participants had the right formal qualifications but had limited information which made them struggle on how to instruct with learners with ASD.

Furthermore, the study strove to find out if teachers had specific skills to teach and handle learners with ASD. It was revealed that only four teachers received extra training in ASD and eight had no extra training but learnt most of the characteristics and strategies on ASD from friends and learners. It is important to know how much expertise we have in ASD in order for us to relate to the experiences teachers undergo when teaching learners with ASD. The primary assumption is that teachers with more training, expertise and experience know better how to handle learners with

ASD than teachers with little knowledge and experience. For instance, a study by Leblanc, Richardson and Burns (2009) shows that training increases knowledge of access to professional support resources to assist in meeting the needs of learners and increases knowledge in evidence-based practices in special education.

In Zambia, there are less extra professional development trainings for special education teachers who work with learners with ASD. However, four teacher participants confirmed having received some training through workshops organized by visiting professionals from UK and America. This demonstrates that ASD is better understood in the western world than in less developed countries as evidenced by the fact that there has been no significant training by the Zambian Ministry of Education for the teachers on ASD. Teachers further complained of not being provided with up to date information on a regular basis on how to teach learners with ASD. According to some teachers, school administrators do not see the importance of special education teachers to participate in ongoing professional development programs which are designed to help teachers develop strategies for working with learners with ASD. Jinale-Snape et al., (2005) concluded that teachers should have adequate autism-specific training because enables them to conduct individual assessment of the child hence can design an individual education programs that take account of the individual profile and personality of the child.

The study affirms that the absence of continuous professional development programs lead to lack of uniformity in teaching learners with ASD in special schools. This was noted during the observation of lessons by the researcher. Teacher training not only ensures that learners are included in lessons; it also increases the confidence of teachers in effectively teaching learners with ASD (Glashan, Mackay and Grive, 2004). Significantly, however, learners with diverse behavioural and learning needs, is an area for which little assistance is provided either in pre-service or in-service teacher professional training (Rogers, 2006). Therefore, schools need to provide high-quality targeted professional development that addresses key gaps in teachers' knowledge.

The study also considered the teachers' work experience in the teaching service as being cardinal. The findings revealed that the majority of the teachers had been in service for a long time with teaching many years of teaching experience. The interpretation is that teachers had comprehensive work experience in teaching, which is good for the study.

In terms of the prevalence of learners with ASD in the classrooms, the study revealed that teachers were able to identify and state the number of learners with ASD. There was a total of thirteen girls and forty-eight boys. This meant that there were more boys with ASD than girls. This finding was in line with the CDC (2012) report which stated that ASD is five times more common in boys than girls. The interviews with the teachers also confirmed that ASD exists in Zambian schools and that teachers have real experiences and challenges in teaching learners with ASD.

The findings of the study revealed further that regardless of demographic differences among special education teachers, teacher respondents were less knowledgeable on ASD and its associated features. Hendricks (2012) also found that special education teachers who served students with autism had low to intermediate levels of knowledge of the disorder and effective instructional practices for students with ASD. It can thus be deduced that a lack of understanding of how to teach learners with ASD lowers teachers' ability to accommodate and engage such learners in their classrooms.

According to Kesterson (2012) most teachers have limited knowledge on childhood development disorders. As a result, most of them are not prepared to work with learners with challenging behaviours. Consequently, due to such limited knowledge, many teachers label learners with ASD as socially inappropriate, lazy and stubborn. The findings revealed that teachers who were not so sure of what Autism is, had difficulties engaging learners during lessons. For instance, one teacher referred to autistic learners as being difficult. The same teacher was often moving all over the classroom trying to make learners with hyperactive behaviour to sit down. This would affect the learning process for all the other learners.

However, all the participants mentioned that practical experience is essential to gain information on autism as well as to learn how to work with difficult learners. Teachers reported that they learn a lot of things from the children and not necessarily from our previous formal training. So they need hands on training in order to teach these learners. The teachers also wished for more training on how to support the learning process of learners with ASD.

In a study which was done outside Zambia, Loiacono and Valenti (2010) reported that a large portion of teachers who graduated from teaching programmes received minimal training in evidence based practice for learners with ASD. Our study confirmed the aforementioned in the

Zambian context as it was evident from the participants' responses that our institutions of higher education do not offer sufficient ASD-specific course work. This is also related to teachers' reports that sometimes they used aversive punishment to ensure that learners with ASD benefit from class activities. This suggests that inappropriate teaching and treatments may, at times be used by teachers due to lack of specific knowledge about certain neural developmental problems among learners. However, the findings also revealed that most of teachers held a positive attitude toward teaching learners with ASD. For instance, Teachers added that teaching learners with ASD is interesting because these children are fast learners and they love orderliness."

Further, the teachers mentioned that there were several benefits which learners with ASD were likely to obtain when taught in a specialised classroom. This was consistent with O'Rourke and Houghton's (2010) study which demonstrated that teachers believed that learners with ASD could find success in a special classroom with adequately trained special teachers and teaching aids.

The study further revealed that teachers exhibited their knowledge of the condition through various definitions. For example one defined autism as a type of disorder where children are not able to pay attention to what the teacher is teaching them in class. In layman's language the social aspect may be good depending on the situation of the child at hand. The major features noticed are tantrums and hyperactivity. In addition another teacher described Autism as a mental retardation problem in which learners display different characteristics which are very challenging and difficult to handle. Therefore, the teachers defined Autism according to observed behaviours. However, Kendra (2012) correctly defined Autism as a complex Neuro-developmental disorder that appears during the early years of life affecting the brain functions. According to the American Society of Autism (2008) autism is a complex developmental disability typically appearing during the first three years of life.

The participants further reported that teaching learners with ASD required specialized training although eight of the teachers were of the opinion that the training they received from colleges did not prepare them to work with learners with ASD. This was somewhat argued by Nyoni (2012) who supports the importance of teacher training by stating that teachers' delivering of the teaching and learning contents to learners with ASD was not done in a good faith due to lack of the required knowledge and skills.

In another related matter on teachers' knowledge of learners with ASD, the researcher observed that learners with ASD displayed social isolation and struggled to relate with others. This meant that these children struggled to comprehend both verbal and non-verbal communication within social conversation. This finding was in agreement with the IDEA (1990) which stated that Autism is a developmental disability significantly affecting verbal and non-verbal communication and social interaction thus adversely affecting a child's education performance. Gena (2006) also reported that most learners with Autism have notable abnormal impaired social interactions and communication, abnormal development of cognitive skills, body posture and movements, as well as a restricted repertoire of activities and interests

Learners with ASD also struggle to interpret the emotional states of others and have trouble forming and maintaining friendships. This was evident in the way two autistic learners behaved during a group activity. They did not take part but preferred to play alone. The teacher had to deal with them individually after she was done with the group. Body (2012) concluded by saying that for all individuals with ASD, one key feature that determines their disability is lack of attachment. Owing to this fact, the respondents stated that learners with ASD function on various levels hence the type of support they need within the classroom environment differs.

In addition, Teachers reported that it is difficult to do one thing as expected in teaching learners with ASD because of failure to engage them in activities. Further, the researcher observed that in the classrooms it was challenging for the teachers to pay attention to individual learners due over enrolment and limited suitable teaching resources. Interestingly, the study revealed that within the same spectrum of teachers, there are others who could differentiate instructions and engage learners during an activity with less difficulty and make them concentrate fully. This finding was in tandem with the findings of Emam and Farrell (2009) who inferred that children with ASD often have average to high intellectual ability thus proving their ability to academically meet standards in a school setting. However, meeting academic standards is often difficult due to the difficulties they face in social and emotional comprehension. Nevertheless, the finding confirmed that some learners with ASD can excel in academic work if given the opportunity and because of their intellectual abilities.

The researcher observed that children with ASD displayed restricted imaginative and inflexible cognitive skills. For example, they had difficulties with pretend-play of being what they are not

and had difficulties accepting change. They wanted the same type of food sitting arrangement. This finding was in agreement with Wicks-Nelson and Israel (2009) who reported that behavioural problems such as repetitive actions, obsessive and unimaginative play are common in learners with ASD. This was particularly evident in their need for sameness during class activities. For example, maintaining the same play area and refusing to engage in new activities both in their own behaviour and environment. Alberta Learning (2003) said that due to their need for routine, children with ASD resist change and find it difficult to anticipate future events. Thus planning and organisation was often challenging to them. Children with ASD tended to focus on the immediate word and thus depended on routine and predictability.

The autistic children also preferred to play on their own and were often found to have one or more stereotyped and restricted patterns. It was thus observed by the researcher during lessons that learners had abnormalities like hand or finger flapping, walking on the toes, rocking and whirling. These children might also show a preoccupation with unusual objects like elastic bands and sticks. However, incorporating the child's preferences and special interests into the instructional programme helps them to learn. The procedures used should take on the characteristics of being custom designed for each child.

The findings of this study were consistent with those of other researchers who found that the teaching of learners with ASD required adequate training on the part of teachers because of the various challenges involved in teaching these learners. Baker (2012) proposes that in order to develop appropriate models for teachers who will work with learners with ASD, it is essential for teacher preparation programmes to infuse evidence based practices into their coursework. If teachers are to be knowledgeable on ASD, they can identify ways of supporting learners rather than label them as being naughty.

Richardson and Burns (2009) provided 200 minutes of training to in-service and pre-service teachers enrolled at an unnamed university. Results indicated that training increased knowledge of access to professional support, resources to assist in meeting the needs of learners and increased knowledge of ASD and evidence-based practices in special education.

### **5.3 Challenges Experienced when Teaching Learners with ASD**

The findings revealed that teaching learners with ASD comes with a lot of challenges, both behavioural and environmental. However the approach made towards the child with ASD is very important. From the findings of the study, the data suggested that 90% of the respondents perceived the teaching of learners with ASD to be difficult due to the challenging behaviours that come with it. Teachers defined challenging behaviour as that which is difficult to handle or ignore because it draws the attention of others and cannot be handled or ignored in a classroom setup. This view is supported by Turnbull and Turnbull (1999) who state that behaviours such as aggression or violence towards others, screaming, not completing tasks, talking constantly or running in class, are rightfully viewed as challenging behaviours in educational settings. In their definitions of challenging behaviours, the teacher participants used words like, 'difficult to handle', 'not easy to cope with' and 'different from other kids,' thus emphasizing that the behaviours were really challenging.

There are various studies that have been conducted on teachers' experiences in teaching learners with ASD around the world. For instance, Carr, Reeve, and Manito-McLaughlin (1996) and Horner and Day (1997) in their studies with severely challenged intellectual children, they observed some display of disruptive and self-injurious behaviours on days with targeted setting events than on days without targeted setting events. In this study it was difficult to monitor setting events or triggers because the teachers complained that due to the classes being overcrowded, catering for individual learners was impossible. As supported by Rohrer and Sampson (2014), the setting events that influenced the learners included, fatigue, pain, changes in staff or schedule, being denied an outing or favourite toy, noise, colours or irritating clothing. Hence, this required that teachers work with small numbers of learners in an organised and scheduled classroom.

The study showed that challenging behaviours were of a wide range and referred to anything an individual could do which was inappropriate or which stopped them from taking part in everyday activities or affected their ability to learn and develop. Examples were, running away, poor eye contact, crying, banging and throwing things, less concentration, difficulties to communicate needs, and aggression. These aforementioned were in agreement with the findings of this study. For example, learners with ASD were reported to have low concentration span. During lesson observation it was found that one other challenging behaviours was low concentration during class

activities, for example, looking away from the book and not completing class activities. The researcher observed that the longest period a learner with ASD would sit to do a class activity was about five-ten minutes. Failure to attend to one activity at a time would make it difficult for teachers to support learners with ASD to progress academically and socially. This was in line with the findings of Kanner (1943) who noticed some inability in autistic learners to relate in an ordinary manner to other people and situations. He described this behaviour as “extreme aloofness”. Though this was not the case with some of the learners observed during the study, teachers reported that some of the learners with ASD were able to interact well with friends after teaching them some social skills. This shows that social impairment in learners with ASD is not a permanent limitation and it varies from one individual to another.

Dhaliwal (2013) stated that to manage challenging behaviour was harder for some teachers. Grindle *et al.* (2012) ; Grossland and Dunlap (2012) added that following classroom management strategies broadens the child’s knowledge because learners are able to learn more appropriately from trained teachers who know how to manage challenging behaviour adequately. This study indicated that teachers had less knowledge hence managing challenging behaviours are so stressful. This was confirmed by Teacher H who stated that, “Challenging behaviour becomes very difficult to handle especially when children are not getting the instructions the way you want them to do things, to carry out something and also because they become stressed and then you don’t understand each other, you may even get angry and maybe you think of beating them.” This is line with the findings of Harris (2006).

The study also found that violence was another challenging behaviour exhibited by learners with ASD. This finding coincides with the findings of Westwood (2004) who said, violence, self-injury, destruction, repetitive, and disruptive, sensory misconception were attributed to ASD. Dawson, (2008) further stated that the causes of such behaviours are complex and have a specific function even after careful observation and analysis. In terms of explanation given for challenging behaviour, teachers in Kiernan and Kiernan (1994) cited in rank order; attention seeking, demand, avoidance, communication problems, stress, interference with routines and provocation.

However, the findings of this study revealed that the participants had different explanations and reasons for challenging behaviour such as; the autistic learners’ brains were dispositional to behave that way; or it was because of the disability. Teachers’ understanding of challenging behaviour in

learners with ASD determines how they experience and respond in supporting learners. This is based on the self-efficacy theory which states that teachers' self-efficacy influences their teaching behaviours and their students' motivation and achievement (Skaalvik and Skaalvik, 2007; Tschannen-Moran and Woolfolk Hoy, 2001).

It was further noted by the researcher that some violence was at times observable in some children with ASD and it made them to be destructive during lessons. However, the study did not draw a crude conclusion that learners with ASD are always violent because the learners' anxiety can sometimes be misunderstood as violence. It can also be due to excitement, failure to express needs and being locked up. Thus the violence was triggered by some stimulating factors. The researcher observed that teachers who were positive and engaged with learners experienced no violence during lessons. Therefore, the study suggests that teachers should identify factors that could trigger violent behaviour and create a comfortable learning environment. Consequently, the autistic learners could benefit from the teaching and learning processes because every learner can learn if provided with a conducive learning environment.

In addition, the study showed that communication problems were observable and qualified as some of the challenging behaviours found in children with ASD in schools. This was in tandem with the findings of Whittaker (2001) that revealed that problems with language and communication in learners with ASD imply that the learner may not be able to express needs, request help, or discuss feelings of anxiousness or pain in class. Thus all the teachers reported that learners with ASD had impairments in communication. Due to problems to communicate, learners with ASD tend to be aggressive and self-injurious as a way of communicating. The study further established that communication and behavioural difficulties experienced by learners with ASD can vary across a wide spectrum.

Teachers reported that some learners were able to communicate their needs through gestures but a teacher had to be attentive to understand what message the learner was giving. This is in correlation with the findings of Myles (2005) who stated that communication can take a variety of forms and may not necessarily include the use of speech. For example, body language, eye contact, gestures, singing, symbols, pictures, photographs, real objects, music and pointing. Some behaviours are effective because they meet the needs and the child is understood by the teacher as a way of interacting with others and the environment. In addition, Jordan (2008) postulates that,

learners with ASD interpret language literally and some teachers interpret it as an attempt to be naughty. However, if teachers understand this behaviour, they could note it as a signal of confusion and the inability to understand the context in which language is used. Thus teachers must be aware of the behaviour models available and have the understanding of applied behaviour analysis and other recommended practices in special education (Schwartz, *et al.*, 2004).

The use of Picture Exchange Communication Strategies (PECS) can enhance communication to and from children with autism that have a wide variety of needs and abilities (Wing and Gould, 2000). However, the findings of this study revealed that PECS was not used in the three schools. Teachers explained that most learners with ASD had difficulties looking at pictures due to poor concentration and eye contact. Hence the use of PECS to communicate was difficult. This was in contrast to Mikala (2016)'s findings that the strategy of PECS was a success in Zambia and user friendly because all the teachers categorically commended the system. According to the teachers in our study, communicating with learners was not easy because of social barriers in learners with ASD. This was compounded by the fact that schools were not fully oriented on how to use the strategy and learners had different ways of interpreting pictures.

Furthermore, the study revealed hyperactivity and physical aggression as being part of the common challenging behaviours exhibited by autistic children in the three schools. This was in agreement with the findings of Harris *et al.* (1996) that teachers of children with ASD mentioned hyperactivity, physical aggression, and non-compliance as being challenging behaviours. Teachers revealed that aggressiveness and hyperactivity became more pronounced when the autistic children were frustrated especially if their needs were not achieved and appreciated as they demanded for them.

During lesson observations the researcher observed that learners who showed physical aggression were a threat to their peers and to themselves. This was confirmed by one teacher who reported that, some learners had to stop school because parents thought their children were in danger and teachers were also in fear. It is contended in some other research that the purpose of such behaviour is to have needs met. Strong relationships between setting events and challenging behaviour have been documented in a number of research studies (Carr, Reeve, and Manito-McLaughlin, 1996; Horner Day and Day, 1997).

Further, it was reported that the behaviour of aggression came when learners with ASD were not engaged during lessons and felt neglected by the teacher. For instance, in a school setting teachers reported that they keep them busy because when learners with ASD are kept busy, they do not show aggressive behaviours. These children require extra attention for them to function fully and if no extra attention is given then they are likely to experience and exhibit aggression in order to show displeasure. Therefore, in order to reduce hyperactivity and aggression in learners with ASD, teachers should always be attentive to the triggers, clues and interests of every individual learner. This would enable them to have positive experiences when teaching learners with ASD (Jordan and Jones, 2000).

Furthermore, the findings revealed that among the types of challenging behaviours was disruptive behaviour. This was in tandem with the findings of Dhawal (2013) who reported that disruptive behaviour prevents teaching from taking place and prevents a learner from participating in class activities and engaging in interactive activities with peers. The behaviour is also very stressful for teachers. In study, disruptive behaviour disturbed the teaching and learning process in that the teachers found it most challenging because it diverted the teachers from being able to carry out their daily teaching roles. This was evident in the way teachers struggled to maintain order during lessons due to varying learner limitations and needs which could cause conflicts in class.

#### **5.4 Classroom Strategies Used by Teachers to Support Learners with Autism Spectrum Disorders**

Strategies for learners with ASD are necessary to help increase student achievement. Despite the various challenging behaviours teachers experienced in teaching learners with ASD, the findings revealed that teachers were still struggling with appropriate strategies to support the learning of learners with ASD. This was discovered during interviews when teachers were asked to mention some of the strategies they used to teach learners with ASD. Teachers mentioned a few strategies such as music, pictures, toys and identifying the child's interests. The other teachers mentioned locking the learners, textbooks and ignoring the learner,

On the strategies, the interview and observation checklist revealed that teachers in the three different schools had some challenges in providing instruction. Some of the teachers were using old textbooks that did not include strategies to differentiate instruction. Other teachers

differentiated instruction but could not meet all of the instructional needs of their learners with and without an ASD diagnosis because of the number of learners in their classes. In addition to instructional problems, the teachers did not have to deal with behaviours associated with ASD. According to the interview comments, the teachers were trying to meet the needs of all of the children although some were lacking the needed resources.

The first common strategy was the use of a Visual Schedules or Visual Prompts. This strategy was in agreement with Peeters (1997) and Quill (1997) who stated that visual prompts take the form of pictures, icons, photographs or gestures to enhance the understanding of spoken words. The use of visual systems can strengthen the child's understanding of communication in his or her environment. In addition, Teachers reported that they saw that some of the learners with ASD liked picture puzzles so they started giving the learner picture puzzles and that made him to sit. But the child became too attached to the puzzle such that he never did anything else apart from solving the picture puzzle. Hence they had to bring something new. However, the study found that puzzles improved cognitive levels in learners with ASD as was reported by teacher respondents that puzzles stimulate creative and analytical skills in learners.

Additionally, Hodgdon (1995) found that working with ASD learners in a visual environment supports immediate communication interactions. It also supports understanding and provides a no transient foundation essential for more effective communication. It builds on children's strengths rather than placing more demand on their area of greatest difficulty. In the study, teachers reported that visual supports were used to give these children information and direction. Consequently, the children's comprehension increased significantly. For instance, the use of toys and other playing objects for most of these children was a positive strategy as they were captivated and kept busy playing with the toys.

This teaching or management strategy of ASD among learners involved the manipulation of their behaviours through interactive methodologies for creative and practical activities that made them enjoy the activity as they applied the visual pictorial concept. This correlates with the findings of Knoster and Llewellyn (2007) who stated that when toys are used, most of the children sit and play with the toys. Visual pictorial aids were also used as teaching aids. The pictorial aids attracted the ASD children to follow a system and be able to engage during lessons while having fun in their learning endeavours. This was evident during lesson observations. Learners enjoyed activities that

involved visuals though schools had limited visuals like toys, picture puzzles, ipads and story books.

Another common strategy was the use of the child's particular interest to facilitate learning. This strategy was in tandem with Snell and Janney (2008) who discovered that various definitions pointed to the fact that autism is broad and reflects a wide range of individual impairments in communication, social interaction and unusual patterns of behaviours, interests and activities. Children with ASD show preoccupation with one narrow interest and insist on following routines. Therefore when a teacher notices and discovers the interest it can be an opportunity for the teacher to use the learner's area of interest to facilitate learning. Learners with ASD display different behaviours at any given time because they have different interests and their interests vary. Therefore, teachers capitalized on what the child wanted or showed interest in at a given time. The study further found that some of the teachers supported the learning of learners with ASD by adapting the curriculum to the learning needs of the learners.

One teacher stated that they used their own initiative to modify the content of the curriculum to the needs of their learners though this was stressful. Soto-Chodiman *et al.* (2012) in their study further found that the outperforming perceived challenge was the issue of increased workload related stress which the study's participants stated that they experienced when attempting to modify their class curriculum and teaching techniques to meet the language, communication and behavioral needs of their students with ASD which were also perceived as challenges. This finding was in agreement with that of Meyer and Janney (2005) who stated that teachers should consider adaptations to the curriculum, instruction, or expectations that may be required according to a student's readiness, interests, and learning profile. The procedures used took on the characteristics of being custom designed for each child, allowing for individual adjustment within the package that met each child's unique skills and needs. When a child is engaged, connection and interaction occur. Conversely, when he or she is not engaged, he or she is not available for learning (Hurth *et al.* 1999). The study found that teachers had difficulties to engage learners with ASD during class activities and learners were seen moving about with nothing to do in class and outside the classrooms.

Additional strategies which were mentioned by one teacher were Time Out and Verbal Warning. The teachers mentioned that these were useful in incidents of serious misbehaviour or to prevent

the escalation of unwanted behaviour. In such circumstances for example, a child would go to a particular place in the class room designated as “the time out” or “the cool down area”. Time outs should be for designated misbehaviours only and be part of a planned hierarchy of responses. The time out area should be away from the other students but in the view of the teacher. This approach should be for a limited and specified period. Research has shown that five minutes is an optimal timeframe (Jordan *et al.* 2004).

Time out is a form of punishment of removing a learner away from a privilege, in this case the classroom. According to Janney and Snell (2008) for time out to be effective, the learner’s cognitive and social development should be considered because as demonstrated from previous literature, ASD is neurological disorder that affects brain functions and due to this limitation, children with ASD have difficulties with comprehension and understanding emotions (Carr, 2006). Thus the uniqueness of their individual cases should be carefully considered. However, this research does not fully support the use of time out because the strategy can encourage misbehavior in learners and can be used as a way of avoiding class activities, also it not applicable on learners with ASD due to their limitation in comprehending situations.

Further, the strategy of verbal warning can lead teachers to fall into the habit of scolding learners when they show unwanted behavior. Walker (2004) adds that verbal reprimands have a negative effect on learners with problem behavior. For example, if a learner has few positive ways to communicate and has learned that negative behavior is a more certain way to get attention than being quiet and complain, verbal comments that teachers think of as being reprimands can actually be reinforcing to the learner. Further, Canter *et al.* (1990) argue that regarding punishment as the result of consequences has seen a number of schools develop a negative attitude towards challenging behaviours by employing power and control. Power and control depend heavily on the importance of the teacher and schools to determine how students should behave and what should be done to encourage power and control.

The study found that another teaching strategy for learners with ASD in schools was the use of rewarding appropriate behaviour with positive outcomes such as verbal praise, free time and prizes. This strategy was regularly used in most schools. The teacher participants talked about the role of praise in reducing challenging behaviours. Teachers talked about rewarding through praise and prizes. These views were in agreement with the literature which suggests that learners respond

well to praise than punishment (Doidge, 2005; Kohn, 1993; Robertson, 1996). In addition, Pierucci (2014) states that natural rewards increase the chances that learners will use appropriate behaviour during daily activities. Therefore, it is advisable that teachers reward a learner with something that is related to what the child is doing or saying. This was affirmed when teachers in the study reported that rewarding the good behaviour allows the bad behaviour to diminish. However, the use of praise needs to be more meaningful. Praise only makes complete sense in a social context where both giver and receiver understand its meaning and are already in a relationship of mutual respect and trust. Furthermore, “being positive” is not just about praising learners, it is also about maintaining a positive outlook during your time with them.

The study also found that music and stories were the teaching strategies that came out prominently and commonly. The two strategies were in tandem with Ozdemir (2008) who found that proper implementation of social stories decreased the need for additional behaviour management interventions, as well as, reduced disruptive behaviours for children with ASD. The researcher also observed that music and stories were enjoyed by learners with ASD and could make them stay still and concentrate on what teachers were teaching. The teachers stated that, they normally give them music therapy and also find time to give them work according to their interests and abilities. However, some teachers were too loud. This caused some learners with ASD to feel anxious and fidget around with ears closed. Hence, music and stories have to be done in a soft manner as a therapy for relaxation.

The study also found that another effective classroom strategy was the provision of puzzles as most of the children liked them. This strategy was in tandem with the work of Nance (2017) who mentioned puzzles as one of the visual strategies that are educative and entertaining to children with ASD because puzzles increase self-confidence, persistence, independence, concentration, social skills, sorting and eye hand co-ordination in children with special needs. The study further supported this by explaining that teachers used puzzles because the children enjoyed playing with them. This classroom strategy helped and kept the children busy for a longer period of time without disturbance or going into tantrum behaviour. Teachers used this strategy in order to attract learners’ attention and concentrate on the class activities. This helped and made it possible for teachers to use this strategy to manipulate learners’ behaviour in that it enabled and provided a

platform for an interactive learning as the children were exposed to creative activities which they enjoyed.

Furthermore, the study found another classroom strategy of locking learners in class to limit the dangerous behaviour of running away. This method was probably used in line with the suggestions of the Resource Guide (2007) which states that a student with ASD is considered to be a safety risk in the school setting therefore adults involved with the student need to have access to the information and supports that are required to ensure a safe learning environment. A safety assessment can help to identify the factors that may lead to or cause situations and provide an assessment of the potential risks in given situations. However, the study found that locking learners with ASD was ineffective and triggered anxiety among learners thereby making them to become aggressive. Nevertheless, most of the learners in the study were blocked from making unnecessary movements outside the classroom, because there was no one to monitor them. But at one schools a learner was allowed to enjoy outdoor activities to help in calming down some of the sensory needs like noise.

## **5.5. Summary**

This chapter presented the discussion of findings in line with the research objectives. The study found that teachers who taught learners with ASD did not adequately possess the much needed and desired knowledge of the condition in question. Teachers also reported that teaching learners with ASD required specialized training although the majority of the teachers were of the opinion that the training they received did not prepare them to work with learners with ASD. The study further found that teachers understood ASD as an intellectual disability that was characterized by a number of features such as problems with communication, comprehension and social skills for interacting with other people. The study also found that children with ASD exhibited the following challenging behaviours in schools; attention seeking, self-isolation, violence, throwing temper tantrum, communication problems, aggression, biting oneself and disruptive behaviour. The findings also revealed that teachers used the following teaching strategies when handling learners with ASD; visual prompts, children's particular interest, preferences, timeout, praise, rewards music, stories, provision of puzzles and locking them up in class.

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

#### 6.1. Overview

The previous chapter discussed the findings by bringing out issues on the teacher knowledge, challenging behaviours and teaching strategies used for learners with ASD. This chapter presents the conclusion and recommendations of the study. The conclusion is drawn on the basis of the findings of the study and thereafter recommendations based on the findings of the study are made. Finally, the chapter ends by suggesting areas for further research based on the findings of the study.

#### 6.2. Conclusion

According to CDC (2015) the prevalence of autism in both special and general education classrooms in schools is on the increase. This trend has led to increased advocacy in educating all children with special education needs, particularly those with ASD. But there is no guarantee that teachers in these schools have appropriate knowledge and expertise to support the needs of learners with ASD. This situation creates a challenge for teachers (Lindsay *et al.*, 2014). Teachers also reported that teaching learners with ASD required special extra training although the majority of the teachers were of the opinion that the formal training they received did not prepare them to work with learners with ASD. Further, the study generally found that poor knowledge, lack of appropriate training, difficult communication and behaviours in learners, lack of suitable teaching resources, and unstructured classrooms were some of the challenges teachers experienced when teaching learners with ASD in special schools.

Despite the aforementioned challenges, teachers still believed that with the differentiation of strategies learners with ASD could benefit from special education and become responsible citizens. Furthermore, in terms of the teaching strategies that teachers use when teaching learners with ASD in schools, the study revealed that teachers used visual cues, children's particular interest, preference, timeout, praise, rewards, music, stories, provision of puzzles and limiting movements out of class.

### 6.3. Recommendations

Based on the findings of the study, the following key recommendations emerged:

1. Given the participants positive experiences on the teaching and learning of learners with ASD, the government through the Ministry of General Education should provide adequate teacher training in ASD knowledge and skills by promoting Continuous Professional Development (CPD) in order to make advancements in the use of relevant technology and information thus bridging the gap in teachers' knowledge about ASD.
2. Government through the Ministry of General Education (MoGE), Provincial Education Officers (PEOs), District Education Board Secretaries (DEBs), school boards, head teachers, parents and co-operating partners should provide schools with modern teaching materials for example; Ipads, computers, talking toys and story books, for learners with ASD. It is recommended that education programmes need to be revised in order to meet the individual needs of learners with ASD in order to prevent regression but assist them developed into responsible citizens in adulthood.
3. There is also need for the Ministry of General Education to establish collaborative teams such as speech therapists, doctors, physiotherapists, occupational therapists, and assessors to provide services within the school thereby by reducing the stress of parents moving around looking to access special services. Teachers should also work closely with parents for continuity of services at home for accomplishment of objectives.
4. This study further recommends the improvement of assessment and diagnostic services for ASD in Zambia and to also increase the level of knowledge and awareness of parents and health care professionals about ASD in Zambia through continued massive education, as well as providing an enabling environment for training of different professionals that will be involved in a multidisciplinary approach of managing Zambian children with ASD.

#### **6.4. Areas for Further Research**

Arising from the research findings, other aspects of this study area may not have been studied and these areas may need to be researched on. The areas of further study may include:

1. Research into the effective implementation of the teaching strategies on learners with ASD.
2. Future research may also be conducted to investigate how adequate special education teachers are trained from the colleges of education into the labour market to teach learners with ASD.

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## APPENDICES

### Appendix 1: Informed Consent Form Teachers

#### THE UNIVERSITY OF ZAMBIA SCHOOL OF EDUCATION DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL EDUCATION INFORMED CONSENT FORM TEACHERS

Please read this document carefully. Sign your name below only if you agree that you fully understand your rights. Your signature is required for your participation. For you to participate in this project, you must be a teacher who knows the children fairly well. If you desire a copy of this consent form, you may request one and we will be very happy to provide it.

Dear Sir/Madam, My name is Ngosa Doroth a Masters student from the University of Zambia currently conducting research.

Description of the Study: You are being invited to take part in this study on the experiences of teacher in teaching learners with Autism Spectrum Disorders (ASD) in Lusaka district.

The aim of this study is mainly to investigate the experiences of teacher in teaching learners with ASD, in Lusaka district.

The study will also attempt to suggest appropriate corrective strategies on how to support learners with ASD. You will be required to respond to certain questions pertaining to the child behaviour in your class.

#### Safety of the study

We wish to assure you that this study does not pose any physical, mental or other risks to you. At certain intervals, the researcher will need to observe your lessons in class. Prior to the

Time Involvement: Time will be lost from your work schedule as it is necessary that you are explained to how this study will be conducted. This is very important. You will do this study alone away from the pupil and during your spare time. On one of the days, your class sessions will be requested to be observed

#### Teachers' task

As a class teacher, you will be required to complete an interview about the knowledge on ASD and methods used in class

Foreseeable Benefits: We cannot guarantee that you will receive any direct benefits from this study. However, as a practicing teacher, you will have an opportunity to contribute to the

improvement of education for young learners that will benefit this nation a great deal. In addition to your knowledge as a teacher, you will certainly learn one or two other things about children's education which other educationists and researchers are interested in.

**Participant Rights:**

- Participation in this study is purely voluntary so if you decide to withdraw at any point, you may freely do so, and there will be no consequences for that decision. However, we are very much interested in working with you.
- All personal identifying information about you and the participating children will be kept confidential and the data sheets will be kept in secured lockers in accordance with the standards of the University of Zambia Research and Ethics Committee. If the results of this study are required for publication as we hope, your identity will still be kept very private. This is the standard way of conducting this type of research.
- Feel to ask any question so that you fully understand this whole activity.

**Signatures:**

I,.....(name of participant-teacher) having read what this study is all about do hereby agree to participate. My signature testifies that I understand the nature of this study, consent process and management of confidentiality as indicated above. I also understand that I can withdraw at any time during this study.

Signature of Research Participant: .....

Phone Number: .....

Date.....

Name of Researcher: .....

Signature of Researcher: .....

Phone Number: .....

Date.....

Contacts: For additional clarifications about this research, please you may contact the following people, the first one who is my supervisor in this research.

Dr. Sylvia Mwanza-Kabaghe,

University of Zambia,

P.O. Box 32379,

Lusaka

Mr. Kalima Kalima,

Head of Department,

Department of Educational Psychology,

Sociology and Special Education

School of Education

University of Zambia

P.O. Box 32379,

Lusaka

Administrative Secretary

Humanities and Education Research and Ethics Committee

Great East Road Campus

University of Zambia

P.O. Box 32379

Lusaka

## **Appendix 2: Interview schedules for teachers**

### **Introduction**

Your School has been selected to help in finding out the teachers' experiences in teaching learners with Autism Spectrum Disorder (ASD).

### **SECTION A: Biographic Data**

1. Name of participant
2. Sex of participant
3. Age range of participant

### **SECTION B: Teacher knowledge on ASD**

4. What is your highest professional qualification?
5. How trained are you to teach learners with Autism?
6. How long have you been teaching children with special needs?
7. What do you understand by the term Autism?
8. What are the features associated with autism?
9. How many learners with ASD do you have in class, by gender?

### **SECTION C: Experienced challenges in teaching learner with ASD**

10. Describe your experience teaching with ASD children
11. Please define challenging behaviour in your own words.
12. Mention some of the challenging behaviours you consider very challenging.
13. Why do you think learners with ASD present challenging behaviours?

### **SECTION D: To find out what strategies the teacher use to teach learners with AS D.**

14. How do you teach learners with ASD during lessons?
15. How do you communicate instructions in class?
16. What strategies have you use in managing challenging behaviours and why?

**Thank you for your co-operation**

### Appendix 3: Lesson Observation Checklist

NO.	Questions	Yes	No
1	Class routine/ Size		
2	Is the class well arranged and safe?		
3	Is the teacher attentive to the needs of the learners?		
4.	Does the teacher use a variety of communication methods and gives learners an opportunity to communicate?		
5.	Does the teacher use physical interventions e.g pushing, pinching, slapping....		
6.	Is the teacher using positive behavior strategies? Reassurance, redirection, praise,		
7.	Is the teacher showing unpleasing facial expressions in dealing with challenging behavior?		
8.	Does the teacher always interact with the learners?		
9.	Is the teacher differentiating instructions, content, activities and resources		

**Appendix 4: Ethical Clearance**



**THE UNIVERSITY OF ZAMBIA**

**DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

Great East Road | P.O. Box 32379 | Lusaka 10101 | **Tel:** +260-211-290 258/291 777  
**Fax:** +260-1-290 258/253 952 | **Email:** director@drgrs.unza.zm | **Website:** www.unza.zm

**Approval of Study**

8<sup>th</sup> August, 2018

**REF. No. HSSREC: 2017-DECEMBER-025**

Ms. Dorothy Ngosa  
 C/O The University of Zambia  
 P.O Box 32379  
**LUSAKA**

Dear Ms. Ngosa,

**RE: “TEACHERS’ PERCEPTIONS TOWARDS CHALLENGING BEHAVIORS AND MANAGEMENT STRATEGIES OF LEARNERS WITH AUTISM SPECTRUM DISORDERS IN SELECTED SPECIAL SCHOOLS IN LUSAKA DISTRICT”**

The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB resolved to **approve** this study **subject to corrections** and your participation as Principal Investigator for a period of one year.

<b>Review Type</b>	<b>Expedited Review</b>	<b>Approval No. HSSREC: 2017-DECEMBER-025</b>
Approval and Expiry Date	Approval Date: 8 <sup>th</sup> August, 2018	Expiry Date: 7 <sup>th</sup> August, 2019
Protocol Version and Date	Version- Nil	8 <sup>th</sup> August, 2018
Information Sheet, Consent Forms and Dates	<ul style="list-style-type: none"> <li>English.</li> </ul>	To be provided
Consent form ID and Date	Version	To be provided
Recruitment Materials	Nil	Nil

There are specific conditions that will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

#### **Conditions of Approval**

- Provide information sheets and consent letters as these were not attached. The information sheets should have had the essential features included. Please use the WHO templates which you could download at [www.who.int/rpc/research\\_ethics/informed\\_consent/en/](http://www.who.int/rpc/research_ethics/informed_consent/en/). REC would appreciate if the PI could customise the WHO templates and include the domains of what the submitted protocol is positing on tools and the sampling units (people who have been or shall be participating in this study).
- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to the IRB within 5 days.
- All protocol modifications must be IRB approved by an application for an amendment prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address or methodology and methods. Many modifications entail minimal risk adjustments to a protocol and/or consent form and can be made on an Expedited basis (via the IRB Chair). Some examples are: format changes, correcting spelling errors, adding key personnel, minor changes to questionnaires, recruiting and changes, and so forth. Other, more substantive changes, especially those that may alter the risk-benefit ratio, may require Full Board review and approval. In all cases, except where noted above regarding subject safety, any changes to any protocol document or procedure must first be approved by the IRB before they can be implemented.
- All protocol deviations must be reported to the IRB within 5 working days.
- All recruitment materials must be approved by the IRB prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. Documents must be received by the IRB at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Any documents received less than 30 days before expiry will be labelled "late submissions" and will incur a penalty.
- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.

- The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB does not “stamp” approval letters, consent forms or study documents unless requested for in writing. This is because the approval letter clearly indicates the documents approved by the IRB as well as other elements and conditions of approval.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB, we would like to wish you all the success as you carry out your study.

Yours sincerely,

*Dr. Jason Mwanza*

BA, MSoc, Sc., PhD

**CHAIRPERSON**

**THE UNIVERSITY OF ZAMBIA HUMANITIES AND  
SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE IRB**

C/O The University of Zambia  
PO Box 323  
LUSAKA

Doc No: 1000

*TEACHERS' PERCEPTIONS TOWARDS CHALLENGING BEHAVIORS AND  
MANAGEMENT STRATEGIES OF LEARNERS WITH AUTISM SPECTRUM  
DISORDERS IN SELECTED SCHOOLS OF LUSAKA DISTRICT*

The University of Zambia Humanities and Social Sciences Research Ethics Committee IRB reviewed and approved this study subject to conditions and your compliance with the following conditions:

Review Type	Reviewed by	Approval No.
Initial Review	Dr. Jason Mwanza	IRB/REC/2017- DECEMBER-001
Approval and Entry Date	Approved Date	Entry Date
Final V. Approval Date	Approved Date	Entry Date
Consent Form Date	Approved Date	Entry Date
Consent Form Date	Approved Date	Entry Date
Consent Form Date	Approved Date	Entry Date