THE EXPLORATION OF CLASSROOM STRATEGIES FOR FACILITATING COMMUNICATION WITH LEARNERS WITH AUTISM: A CASE OF TWO SCHOOLS AT UMLAZI DISTRICT

School of Education

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By

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Declaration

I *Dorah Thembi Ngcobo*, hereby declare that the dissertation titled The Exploration of Classroom Strategies for Facilitating Communication with Learners with Autism: A Case of Two Schools at Umlazi District, is the result of my own investigation and research and that it has not been submitted in part or in full for any degree purpose at any other university. I have also made all possible endeavours to indicate and acknowledge all the sources of borrowed ideas used accordingly

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Supervisor's statement

This dissertation has been submitted with my approval.

Dr Fumane Khanare

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Dedication

I would like to dedicate this study to the Lord Almighty and giver of life, who gave me the strength, and commitment to succeed in the completion of my study.

Also, I would love to dedicate the work to my late mother, Nomsa Iris Bhungane, without her I would not be where I am today.

Abstract

The focus of this topic was to explore the teaching strategies that the classroom teachers use to facilitate communication with learners with autism. The study was conducted in two Special Schools in Umlazi District and used 10 participants. Participants were purposively selected because of the nature of the learners. The study adopted a qualitative research in which a case study design was adopted. In order to explore communication teaching strategies and resources used in the classroom, an interpretivist paradigm was used. The data generation processes was obtained through semi structured interviews and classroom observations. The overall findings of the research show that facilitating communication with learners with autism is complex and multifaceted because each strategies. Picture Exchange Communication System (PECS), visual aids and gestures are predominantly used to facilitate communication with learners with autism. The findings of the research also show that learners with autism are agents of their communication. Teachers rely on other teachers, school therapists, school management teams and parents to throw effective communication strategies in class. The findings reveal that less technological assistive devices are used to facilitate communication in class. Vygotsky, 1978 cognitive constructivism theory and two concepts of Scaffolding and Zone of Proximal Development (ZPD) forms a strong framework of the study since learners with autism depend on continuous guidance and support of the teacher in order to perform a task. Communication teaching strategies of learners with autism differ from that in the mainstream learners because it calls for collaboration of human and non-human resources.

Acronyms and Abbreviations

AAC: Alternative Augmentative Communication

AD: Autistic Disorder

ADA: American Disabilities Act

APA: American Psychiatric Association

ASD: Autism Spectrum Disorder

AS: Asperger Syndrome

CAPS: Curriculum Assessment Policy Statement

CDC: Centres for Disease Control

EFA: Education For All

DOE: Department of Education

HOD: Head of Department

ICT: Information Communication Technology

IQ: Intelligence Quotient

LSEN: Learners with Special Educational Needs

NAS: National Autistic Society

NICHCY: National Information Centre for Children and Youth with Disabilities

NIH: National Institute of Health

NRC: National Research Council

PDD NOS: Pervasive Development Disorder Not Otherwise Suspected

PECS: Picture Exchange Communication System

RSA: Republic of South Africa

SASA: South African Schools Act

SIAS: Screening Identification Assessment & Support

SGD: Speech Generated Devise

SMT: School Management Team

TEACCH: Treatment and Education of Autistic and related communication handicapped children

UNESCO: United National Educational Scientific and Cultural Organization

WHO: World Health Organization

ZPD: Zone of Proximal Development

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

Much has been talked about an African approach to an African problem by African leaders. In comparison to what is expected to be done in addressing these problems in Africa, few institutions and governments have actually taken strategic measures in creating such sustainable solutions to the problem plaguing Africa. The most significant attempts so far have been with South Africa becoming a member of economic development countries which are : Brazil, Russia, India, China and South Africa (BRICS) for socio-economic benefits to the South Africa society in particular and the African continent in general.

Although South Africa can boast of an advanced health system and infrastructure development compared to other underdeveloped countries in Africa, yet there is much that still needs to be done as a member of BRICS. A reliable health sector will serve to strengthen and support the economy and promote the education sector as most learners will be in the classrooms daily rather than in hospital. Considering the breadth of health, the study was therefore centred on health in the classroom of which autism becomes the focus. Amatepee and Chitiyo (2009) assert that there is no doubt a lack of knowledge about the disorder in society in general as well as in health and in education. So far, there is a paucity of research in the field of autism in developed countries as compared to under developed countries. In Africa in particular studies in the field of autism are few compared to developed countries. Furthermore Africa needs to work out its own home grown solutions to address the plight of learners with autism as it is currently being done in developed countries such as America.

Within the classroom context therefore, communication of learning objectives are essential for children in both mainstream schools and a special school context. Bearing in mind the nature of autism, the communication strategy of teachers becomes most vital for facilitating the process of teaching and learning and is far more important than in the mainstream school. Exploring how teachers facilitated teaching through communication and the resources that are used by teachers would constitute the study.

MacKenzie (2008) states that each individual learner with autism has a form or expression that is specific to him/herself. A similar view was voiced by Ashcroft, Agriro and Keohane (2010, p.12) who

posit that "we are yet to encounter children who are alike; however, there are some common characteristics of people with autism." Communication impairment is also evident in early development and tends to persist. The child will display serious abnormalities in communication and expressive language (Moh & Magiati, 2012). In introducing this study, this chapter is divided under the following sub-headings; the background, overview of autism, the purpose of the study, research questions and objectives, a brief overview of the research methodology, the chapter ends with a summary explanation of the chapter divisions of the dissertation.

1.2 Background of the study

Before 1994, South Africa's education system was divided along racial lines which also reflected the quality of education each race received from the apartheid regime. One of such avenues where education disparity was being experienced was within special school education. Although special schools were established they were not allowed for every racial group and in situations where it was available for blacks, it was not adequately resourced for effective teaching and learning.

After 1994 South Africa has experienced various changes in education policies and significant to this study is the change from curriculum 2005 commonly referred to as Outcome Based Education (OBE) which was followed by the National Curriculum Statement (NSC), and presently there is the Curriculum and Assessment Policy Statement (CAPS). These policy changes were, for the mainstream schools as well as for the special school context and were adapted to the special school context in which this study resides.

With respect to inclusive education, the Department of Education (DoE) implemented the White Paper 6 policy[1] document in 2001. Through this policy document it is mandated that all learners have the right to learn regardless of the disability. According to Hall (2012) all children suffering from impairment such as autism are educable. The Department of Social Welfare introduced a disability grant to all people who are disabled including children. This move by the government compelled parents to take children to school for admission because the major regulation for improving the social disability grant was for the confirmation that the child is in schooling as children were no longer hidden at home, and the result was, and is an influx of learners to special schools.

Learners in special schools are currently being admitted through the Screening Identifications Assessment and Support (SIAS) tool. This tool helps teachers to rightfully place learners to

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[1] This document is underpinned by the Bill of rights (section 29), the Salamanca statement, UNESCO, Education for All by 2015 in the NU declaration. All of which perpetrates the values of inclusive education of which South Africa is a signatory.

appropriate classrooms because children are diagnosed and assessed according to disability. This has resulted in autism learners being rightfully diagnosed and placed in the appropriate classroom. Communication is the area of difficulty for learners with autism according to Mirenda, (2009); Hannah, (2004) and they experience difficulty in understanding language usage and words for communication (American Psychiatric Association, 2013). It becomes difficult or complex to communicate with learners with autism in the classroom. A teacher uses various teaching strategies to facilitate communication with learners with autism in class. These include visual aids mostly pictures and sign language and technologically low and high speech generating devices.

The study by Bukare and Munir (2011) indicate that there is a need for Africa to engage in studies on autism so that her people will understand and become aware of it, because not much is known about autism in Africa. They further recommend that Africa needs more policy making attention directed to children with mental health provision especially childhood development disorders and intellectual disability. In South Africa in particular, autism spectrum disorder, (ASD) remains little understood, despite the recognition that it is increasingly becoming diagnosed across all spheres (Grinker, Chambers, Njongwe, Kauchali et al., 2012). However, there is still a dearth of literature about the way in which ASD manifests in African children and lack of literature detailing how parents and the community at large understand this particular form of developmental disorder (Ametepee & Chitiyo, 2009).

Several studies have been done on autism especially in developed countries on communication enhancement and with learners with autism in the classroom but few have been done in Africa. At the time of the study, I realised that no study has been done to look at how communication in the classroom is facilitated with learners with autism in the Umlazi District. Most studies focus on health related issues and not on classroom communication strategies. Autism is a health related issue but in this study, autism is looked at from a classroom perspective and the focus is on facilitation of communication strategies with learners in the classroom. By doing this study I intended to fill the gap within the body of knowledge. Policy makers might also be able to use it and enhance special education policies. My study might also influence the design of education programmes by revealing or generating classroom communication strategies and the use of resources which can be used to enhance learning with learners with autism or the field of education in general.

1.3. The overview of autism in relationship to the classroom context

Learners with autism require high care support in the classroom due to their disabled condition and for this reason a teacher and teacher aider (a non-qualified special school teacher) are together in the same classroom unlike in a mainstream context where there is usually one teacher to support the learners.

In an autism classroom, teachers do not work alone; they work in collaboration with school speech therapists that frequently monitor these learners (Schopler, Van Bourgondien, Wellman & Love, 2010). Teaching strategies could include: Picture Exchange Communication System, Augmentative Alternative Communication, visual aids, technology and gestures, used by teachers to facilitate communication with learners with autism which are regarded as human resources. For the purpose of classroom organisation (Friedland, 2008; Sicile-Kira, 2014) explains that learners with autism are divided into the following groups:

- non-verbal and verbal
- echolalia, selective mute,
- non-functional speech

The benefits of this approach to classroom organisation is based on the fact that teachers are able to use various teaching strategies for facilitating communication with them in class that is appropriate to their learning, since each individual is unique (Wall, 2010 ; McKenzie ,2008). The word autism is broad although it is usually considered to be a psychological disorder. The exploration phenomenon of autism, however, would not be complete without a proper declination and explanation of the concept autism. This section will attempt to provide a brief and vivid explanation and overview of autism under the following sub-headings.

1.3.1 Autism Spectrum Disorder (ASD)

More than half a century ago, Kamer (1943) described autism after observing a group of children displaying deficits in communication skills and interpersonal relations. Today, despite the efforts of numerous researchers, autism remains a unique and perplexing disability. Ashcroft et al. (2010), Barnea- Goraly, Lotspetch and Reisis (2010), assert that autism is a complex spectrum disorder characterised by impairments in social interaction, communication and behaviour, which is regarded as triad impairment, but however, in the view of   Worth (2005) there is an additional fourth area of sensory processing and motor skills.

Greenberg, Tomaino and Charlop (2012) posit that the National Research Council 2001 (NRC), the working arm of the United States National Academies which produces reports that shape policies, inform public opinion and advance the pursuit of Science, Engineering and Medicine, in their comprehensive report on educational interventions for children with autism indicated that approximately one third of children with autism spectrum disorder (ASD) do not develop functional speech. The estimation indicates that 25% of children with autism are categorised as non-verbal or communication deficient (Hart & Banda, 2010). In addition, children with autism are regarded as having difficulty in learning speech and communication (American Psychiatric Association, 2013; Mirenda, 2009). This statistic indicates that the majority of learners with autism may never speak thus the need for communication intervention approaches and classroom strategies that do not require speech are both paramount and obvious as today we find learners with autism studying in inclusive classrooms or in special schools. The picture exchange communication system (PECS), and the augmentative and alternative communication (AAC) system are primarily designed for children with autism (Frost & Bondy, 2002) and are a widely used tool with individuals who experience communication and language deficit (Beukelman & Mirenda, 2005).

1.3.2. Diagnosis

Baird and Charman (2002) have indicated that autism can be detected while the child is still young, for example 2 to 3 years of age. Children who are severely affected with autism (especially in terms of cognitive level and communication) usually show signs at a very early age (under 5 years) and usually speech is a first indication. Moderate children (high function) usually present a behavioural problem at four to five years (Couteur & Baird, 2003). Cumine, Dunlop and Stevenson (2010) posit that the child early diagnosis leads to early intervention by various stakeholders for example the health doctors, occupational therapist and speech therapist especially the latter, because communication is the most common area of difficulty to learners with autism.

Ashcroft et al. (2010) and Mubaiwa (2008) indicate that autism diagnostic disorder is based on the triad of symptoms which is the qualitative impairments of communication abilities, social interaction and restricted repetitive and stereotyped behaviour patterns, interest and abilities and on behaviour observation of the child (Abrahams & Geschwind, 2008).

As much as there is proof that autism is a neuro-developmental disorder, there is an element of a genetic component (Abrahams & Geschwind, 2008). Autism is largely found 4 times more in boys than in girls (Lord & Bishop, 2010). The National Autistic Society (NAS, 2008b) concur and assert

that all studies agree that the incidence in boys is greater than that of girls and a reasonable average would be 1:4 girls to boys.

1.3.3. Statistics

Bishop and Lord (2010) indicate that according to the report of Autism and Developmental Disabilities Monitoring Network (ADDM, 2006), the prevalence rate of children diagnosed with autism spectrum disorders have increased over the past decade. Kogan, Blumberg, Schieve et al. (2009) assert that the pointed prevalence was 110 per 10,000 which indicated that 673,000 in USA children have autism spectrum disorder, and the point is higher than previous estimates. However, Massachusetts General Hospital, Service Administration (HRSA) and Centres for Disease Control (CDC) have published an estimation of the prevalence of autism indicating approximately 1 in 90 children diagnosed with ASD (Kogan et al., 2009). Now, children with ASD are recognised as the second most serious developmental condition after the popular known mental retardation (CDC, 2010). In the present decade, in schools in United States of America, the enrolment increased nearly by four fold from 53,644 to 256,863, indicating that learners are receiving special education services (learners with special educational needs (LSEN) from 6 to 21 years between 1998 and 2007 (Mitchel, 2014).

 Contradictory Baird, Siminoff, Pickles et al. (2006) indicate that the recent rate for autism spectrum disorders (ASD) are estimated about 1 in 10 children in the USA. In addition the most recent result from Centres for disease Control and Prevention, (CDC) (2009) suggest that in the USA the prevalence of ASD is 1/70 in boys and 1/135 in girls.

 In Africa only Arab countries and Northern African Countries have conducted studies on the epidemiology of ASD (Bakare & Munir (2010). The need for epidemiology studies in Africa to define the magnitude of the problem of ASD and the characteristics of children affected by ASD in this region is necessary. Elsabbag, Divan, Koh et al. (2012) postulate that in six central countries in African and southern African countries there was a report which described autism among children who were mentally challenged in the early 1970's and it indicated that there was a preliminary observation that a number of cases of autism are smaller than those who are observed in the United Kingdom but the findings of this preliminary report which was not designed as an epidemiological survey was never verified. However this is an indication that autism spectrum disorder exists in Africa. Recent views in Africa by Bakare and Munir (2011) confirm that they could not identify published data on population- based estimates of the prevalence of ASD and PDD from the African region.

1.3.4. Common features in children with autism

Barnea-Goraly, Lotspetch, and Reisis (2010) and Ashcroft et al., (2010) highlighted that children with autism have triad impairments which are social interactions; impairment of flexibility of thought and imagination as well as impairment of social language and communication however, Worth (2005) indicates that there is a possibility of a fourth impairment of sensory processing and motor skills. The APA (2013) and World Health Organisation WHO (2010) are basically in agreement on the criteria for autism. These organisations highlighted that it is appropriate to refer to a person with autism and not terms like "autistic children". People should understand that they suffer from autism, and are not autistic It is a person first, and then the disability, (Peeters & Gillberg 1999; Furneaux & Roberts 1977; Wing, 1980). The above statement is supported by Willis (2009) when she posits that "people should put the child first, he is a child with autism not an autistic child. Children with autistic spectrum disorder have difficulty in non-verbal communication which may include avoiding eye contact and may be extremely active or placid and self-absorbed (Hannah, 2004; Willis, 2009). The American Psychiatric Association (2013) highlights impairment in the use of non-verbal behaviour like eye to eye gaze, facial expression, body postures, and gesture to regulate social interaction and communication. In addition, learners with autism usually have language development abnormalities, which are accompanied by muteness and inappropriate speech style and also echolalia and by the age of three they still have unusual vocabulary and prefer to the self-using pronouns for instance "you", "she" beyond the age of three years.

1.4. Statement of the problem

At the teacher education training level mostly at university level where teachers are being trained in South Africa, the specialisation approach used by universities is mostly to train teachers according to phases and grades. Teachers are not being trained to teach in a teaching context other than the mainstream context, where most learners do not suffer from any kind of learning disorder. From this perspective therefore, most teachers do not have the required skills to teach in a classroom context other than that of the mainstream context.

In special school situations, most of the teachers who teach learners with autism are not fully capacitated to teach learners with special needs more particularly autism. This is because most of the teachers are not trained to teach learners with special needs. The curriculum for teachers does not seem to cater for those learners whose communication needs are different. This has left most of the learners to struggle to learn more than their peers who do not suffer from such problems. Furthermore, the absence of national statistics has further affected how the needs of learners and the required skills

of the teacher could possibly be addressed regarding the communication aspect and skills within classrooms.

As a special needs education teacher I have observed that even the newly qualified teachers from the university are given an opportunity to be classroom teachers in classes where learners suffer from autism yet they have no experience in the field and no understanding of the learner with special needs. This has further marginalised the learners and makes their life at school more challenging than it has already been.

1.5. Purpose of the study

The study was centred on exploring existing classroom strategies that teachers are using to facilitate communication with learners with autism. The communication of these teachers with their learners is not being considered within the same light as those without autism, as a result of the disability of the learners. This therefore requires the teacher to make use of particular communication skills on the part of their communication strategy in their classrooms. The purpose of the study was centred on exploring the communication strategies used by the teacher in teaching learners with autism. Essential to this purpose were the resources that these teachers used to ensure effective communication with their learners.

1.6. Critical research questions

1. What are the classroom strategies for facilitating communication with learners with autism?
2. What resources do teachers use in order to facilitate effective communication with learners with autism?

1.7. Objectives to the study

- To identify classroom strategies for facilitating communication with learners with autism.
- To understand what resources that teachers use in order to facilitate effective communication with learners with autism.

1.8. Rationale of the study

The study has been motivated by the recent establishment of an autism phase within the special schools by the DoE sub-directorate of inclusive Education (Autism and High Level Support KZN DoE Integrated Action Plan, 2011). The Department of Education (DoE) has provided additional funds to special schools for the development of and nurturing of the teaching learners with autism

within the special schools. This has been done because of their uniqueness and level of high care support and the need compared to other intellectually impaired learners within the school. Because of their uniqueness, they have their own structured learning programme, which meets their needs across all areas of development. If structured teaching reduces anxiety, helping the child to learn new skills that can be practised and developed in a group situation, then it has a positive outcome, supporting inclusion. This gesture by the DoE motivated me to wish to look closer at the teaching strategies that are being offered to learners with autism. This gesture is in accordance with the South African Constitution, the basic principle enshrined in the Bill of Rights (RSA, 1996b 13 Section 29). The purpose of the funding in the DoE was to improve their infrastructure (play grounds, jungle gym, trampoline, swing etc.) and availability of learning resources and therapist resources. Basically the funding from the DoE is for the design of teaching strategies for learners with autism. This study looked at communication strategies used by teachers to facilitate communication with learners with autism and also the resources they use to facilitate communication with learners. In addition, it will also help schools and teachers to have an understanding of their roles in ensuring provision of an effective teaching strategy that will suit the educational needs of ASD learners.

My study was built on the study of Munir and Bakare (2011) when in their findings indicated that further studies with regard to speech and communication on learners with autism, especially in the education area need to be carried out. They concluded that much study needs to be done to address the issue of autism in Africa, more especially in sub-Saharan countries. The reason for doing the study was that I wanted to add my voice on the educational aspect especially in the classroom context, because the twelve studies/articles that have been investigated by Munir and Bakare in Africa are on medicine.

Not enough has been done in Africa about autism and autism with learners in the classroom situation. Due to the few studies that have been done, another reason I was motivated to do this study was I wanted to look at the teaching strategies that are used to facilitate communication   with learners with autism. The study may help policy makers to add to the field of knowledge and of education.

1.9. The significance of the study

The impetus of this study was to develop the education of leaners with autism as well as teachers to be aware and to understand the various teaching strategies to work with when teaching learners with autism. The study may be of great significance to the DoE and on teacher development and also in providing appropriate resources to Full Serviced Schools and Special Schools and most importantly

the training of teachers towards accommodating learners with special needs particularly learners with autism.

Learners with autism are human beings, and full citizens of South Africa, who have the right to basic education as stipulated by the Constitution of South Africa, (RSA, and 1996b Section 13). The provision for the education in section 29 of the Bill of Rights guarantees the right of all South Africans to a basic education. Parents are obligated to take their children to school in spite of their disability. The new government from 1994, after inauguration has created an educational system that would fulfil the vision of opening doors of learning and culture to all. The paramount task was to build a just and good quality education and training to all learners across the country (RSA, 1995a Section17). Given this, learners with autism are given the opportunity to go to school; some are in the mainstream through inclusion and some are in special schools but what they need is to have an education that will improve their lives.

Teachers will benefit by learning new or better communication teaching strategies, and also to facilitate them. Teachers in future will gain confidence in their profession (field of work). The study highlights how classroom communication strategies are being facilitated with learners with autism. This study may contribute to teacher development, because after the study teachers will be aware of classroom facilitating communication strategies for teaching learners with autism. Lastly it will contribute to the DoE because the quality of teaching and learning will improve in the classroom.

The study is important because it will be the first in Umlazi District in Kwa Zulu – Natal. It will help teachers and other researchers to get a better understanding of knowledge and of how communication teaching strategies to learners with autism is facilitated. Furthermore it will raise awareness about autism since it is a disability condition which [people] teachers do not understand or know about it.

1.10. The school context

Basic education in South Africa (SA) is divided into three components: which are early childhood development (ECD), primary and secondary schools which are referred to as mainstream schools because they admit learners who are cognitively capable and do class grades up to grade 12 and write matric examinations. However in this study the school context is the special school which follows the adapted CAPS curriculum due to the cognitive level of learners and the classes are separated according to the disability, age and the level of cognitive IQ of the child. The classes are grouped into phases. Learners with autism are grouped together and according to their age in class.

The following was considered: The classroom communication strategies and how they were facilitated to learners with autism were identified and understood. The classroom activities, interaction between learners and teachers in the classroom, the therapist interventions, school management team support as well as the various teaching strategies were observed and analysed. Availability of resources and professional development of teachers was also observed. Finally the wider level of analysis of examination of factors such as educational policies, guidance, classroom settings and collaboration

1.11. Overview of research and methodology

1.11.1 Research design

Research design is an action plan that acts as a connection between the research question and its accomplishment (Durrheim, 2007). However, Welman, Kruger and Mitchel (2010) describe research design as a plan in which participants are selected in order to generate information from them. Furthermore the purpose of research design is to specify a plan for generating evidence that will be used to answer the research questions.

The study was positioned within the qualitative method because the researcher is interested in meaning and explanation to investigate the research questions. Qualitative research is designed to put it to the researcher how and why things happen as they do (Visagie, 2010) and the whole process of investigation is conducted in a natural setting. Qualitative research is interested in the understanding of issues being researched from the perspective of the participant (Struwing & Stead, 2004). Consequently, the researcher is relying on the participants to get the rich in-depth knowledge about the topic being investigated.

The research being investigated aimed to achieve in depth understanding of strategies for facilitating communication with learners with autism. The study was positioned within the interprevist paradigm because the researcher is aiming at knowing not to change what is taking place (Kumar, 2011). This study provided insight into how people perceive, understand and interpret learners with autism (Neuman, 2011). In addition the interpretive research paradigm's primary aim is to understand and know how things operate in their surroundings (Henning et al. 2009). Interpretivism as epistemology assisted the researcher to collect data in an interactive way, with the aim of understanding and interpreting the meanings underlying the behaviour of participants (Denzin & Lincoln, 2000).

The researcher employed this approach because this study was underpinned by dealing with people, interviewing people, observing phenomenon and analysing documents. The researcher was

dealing with school teachers, learners in a classroom and school therapists for example, occupational and speech therapists since the study dealt with learners with special educational needs in special schools.

1.11.2 Sampling procedure

1.11.3 Non Probability Purposeful sampling

Purposive sampling is also called judgmental sampling (Grinell & Unrau, 2008) and the research is at liberty to make specific choices about which people to include in the sample (Bertram and Christiansen, 2014). Two special schools in the Umlazi district were targeted in the study, because they were available and convenient and represented the characteristics the investigator sought to study, which are the learners with autism and their classroom teachers (Creswell, 2012). All the learners were in the foundation phase (high care) classes. A high care class is a class that requires a high care level of support, for learners with autism. This is due to the uniqueness and the triad characteristics of learners with autism spectrum disorder.

Purposeful sampling was used to meet the needs of the study because the researcher sought to obtain first- hand information from classroom teachers who have experience of learners with autism. Participants in this study were ten classroom teachers of learners with autism in five classrooms in each school. The occupational therapist and speech therapist were included in the study even though my main focus was with the classroom teachers, because they alternate in facilitating communication strategies with learners with autism, and they also design communication programmes to be followed in the classroom.

1.12. Data generation

1.12.1 Observation

An interpretive case study was used in this study because the researcher wants to develop a rich in-depth description of a phenomenon intensively from people who have experience in teaching learners with autism in the classroom and to understand how they facilitate communication strategies to learners with autism (Rule & John, 2011). The use of a case study can provide rich insights into particular situations e.g. classrooms (Rule & John, 2011).

In this study the researcher sought to generate data by using interviews and class observations from two special schools that were selected to do the study. Using more than one method of data collection allows the researcher to compare and cross-check (Yin, 2009) the exploring of classroom communication strategies and how they are facilitated in the classroom with learners with autism

(Creswell, 2012). Observation permitted the researcher to systematically observe and record learners' and teachers' behaviour, interactions and actions in the classroom (Hennink, Hutter & Bailey, 2011) since the method of observation falls under the interpretivist paradigm (Hennink; Hutter & Bailey, 2011).

1.12.2. Semi-structured interviews

Semi- structured interviews were used to generate data in this study. Semi- structured interviews are often the sole data source for a qualitative research project. The researcher sought to understand classroom communication strategies and how teachers facilitate them with learners with autism, particularly the interaction between the teacher and the learner in the classroom (Hennink, Hutter & Bailey, 2011). The advantage of conducting an interview is that the researcher is present during the interview and this makes the process flow easily, and the researcher can ask more questions to obtain more detail about the topic (Bertram & Christiansen, 2014). Before the interview procedure begins, the researcher must define the information needed, and it should relate to the questions that need to be answered (ibid).

The researcher prepared in advance the interview setting by arranging a time and place, and ensured there was quietness and privacy (Greef, 2011) with relevant stakeholders such as classroom teachers of learners with autism and the school therapist. This was done by observing and holding interviews from two schools in the Umlazi District. The researcher specified time together with the gatekeeper and the participants after he/she was granted the permission.

1.13 Data analysis plan and ethical consideration

1.13.1. Thematic coding analysis

Holloway and Todres (2003) state that qualitative approaches are increasingly diverse, complex, and nuanced and thematic analysis should be seen as a functional method of analysing qualitative data. Thematic analysis was utilised in the study to analyse the data generated. Braun and Clarke (2006, p.79) maintain that "thematic analysis organizes and describes data set in detail; furthermore it interprets various aspects of the research topic". They identify six phases of conducting thematic analysis namely: Becoming familiar with the data; generating initial codes; searching for themes; reviewing themes; defining and naming themes and producing the report. These stages were adopted for this study.

1.13.2. Ethical Consideration

In this study ethical procedure was observed. Ethics is an important consideration in research, particularly when the study involves humans (Bertram & Christiansen, 2014) and in qualitative methods ethical issues are important because interviews are delving into people's private lives with the intention of releasing the findings to the public (Kvale & Brinkman, 2009).The researcher should perform within three important ethical principles that include, autonomy, non-maleficence and beneficence (Durrheim & Wassenaar, 2002).

1.14. Delimitations of the study

There are many areas where one can discuss autism such as with their peers at home or society in general. Nevertheless for this study I chose to talk about the learner with autism in the classroom. The DoE usually employ therapists for example, a speech therapist and an occupational therapist to special schools to offer therapy services to learners with special needs. In the two schools where I conducted the study, there were many aspects which needed to be considered for communication between teachers and learners, but I concentrated on the relationship between teachers and the learners in the classroom facilitating communication strategies. Other aspects not directly related to the communication were therefore not considered part of the study.

1.15. The Trustworthiness of the study

Trustworthiness is a corresponding term used in qualitative research as a measure of quality in research. It is the instrument into which data and data analysis are believed and trustworthy. The researcher enhanced the trustworthiness of this study by using Guba's four criteria of trustworthiness (Lincoln & Guba, 1985, p. 290).

1.15.1 Credibility

According to Trochim and Donnelly (2007) credibility is the most important factor in establishing trustworthiness. The researcher established rapport with the participant before the data generation took place. This would be achieved by reviewing articles by different scholars.

1.15.2 Applicability

The purpose of applicability in this study described the exploration of classroom strategies to communicate with learners with autism. Sufficient data was presented to allow comparison.

1.15.3 Consistency

This study emphasised the importance of genuine learning and teaching and application of appropriate strategies to learners with autism.

1.15.4 Neutrality

Bertram and Christiansen (2014) define neutrality as the freedom from bias in research procedures and results. This study was more concerned with the neutrality of data of a researcher. Confirmability was the researcher's criterion for neutrality through establishment of truth value and applicability.

1.16. Overview of chapters

In this chapter the researcher provided an overview of the whole study. It explained the classroom strategies for facilitating communication with learners with autism.

Chapter two constitutes the literature review on the definition, prevalence, classification, commonalities, aetiology, diagnosis of autism and context. Different types and implementation of teaching strategies are also addressed. The chapter also presents the theoretical framework of the study.

Chapter three discusses the methodology employed in generating study data. It explains the instruments used for data generation, participants and discussion of how it was analysed.

Chapter four presents the data analysis according to the themes and sub –themes that were identified using fragments in participants' own words.

Chapter five concludes the study that we arrived at which was based on the analysis of the data generated and presented in previous chapters and the research objectives of the study were also concluded. Furthermore, the chapter ended by suggesting some recommendations for further studies that were based on findings of the study. The recommendations were for further studies to be done and to inform the department and relevant stakeholders of the various challenges that some teachers experience to produce the quality of results that are worthy of appreciation.

1.17. Conclusion

This chapter is a presentation of the overall summary of this study. The following headings were discussed – the background of the study and the purpose and focus which centred on children with autism disorder. The rationale of the study was also discussed and was related to the significance. A brief overview of the research design and methodology was also mentioned which was a qualitative

study within an interpretivist paradigm. This chapter ends with a summary overview of the five chapters in the study. The next chapter will review literature on the exploration of classroom communication strategies and the theoretical framework for the data analysis.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

In this chapter, the literature and theoretical framework related to the exploration of classroom strategies to communicate with learners with autism will be discussed. The first section of the chapter will be the literature review surrounding autism. This will attempt to engage the literature on how teachers facilitate communication strategies to learners with autism and the resources involved .Most of the review was drawn from global sources   as there is a paucity of literature on this area locally. The second section of the chapter deals with the theoretical framework for the study.

2.2. Clarification of terms

2.2.1 Autism

It has been more than half a century since Kamer (1943) first described autism after observing a group of children displaying deficits in communication skills and interpersonal relations. Today, despite the efforts of numerous researchers, autism remains a unique and perplexing disability. Ashcroft et al. (2010), Barnea, Goraly, Lotspetch and Reisis, (2010), Mash and Wolfe (2012)   define autism as a complex disorder characterised by impairments in social interaction, communication and behaviour, which is regarded as triad impairment, but however, in the view of (Worth, 2005) an additional fourth to be the result of a neurological disorder that affects the function of the brain (Sicle-Kira, 2014).

2.2.2 Teacher

 A teacher is the person who is responsible for a learner in the classroom. Teachers are the most important drivers of inclusive education or special schools (Oswald, 2007; Christie, 2008). There are seven roles of a teacher according to the norms and standards for the teachers, (National Policy RSA, 2000a) I will discuss only two, which are related to the study. A teacher as a mediator is arguing that the teacher will mediate learning and teaching in a way that is sensitive to the diverse needs of the learners, including those with barriers to learning and it further argues for teachers to work and communicate effectively with learners in order to provide sound knowledge of the content, NSE (RSA, 2000).

In my view the teacher is supposed to develop herself in the unit in which he/she is specialising so that effective teaching and learning should take place. The teacher should attend in- service training to get skills and knowledge about the unit he is teaching. The DoE is responsible for arranging workshops to

capacitate and develop teachers (Oswald, 2007) to become better equipped to handle learners with special needs. Teachers should be encouraged to be a specialist in their subject area. This role among others reflects the necessity of the understanding of the knowledge, skills, strategies, methods and approaches which are relevant to the subject area (Cerit & Yuksel, 2015)

From my experience teachers should become experts in their field of practice. For instance teachers who are teaching learners with autism must be in a position to understand the condition of the learner (autism spectrum disorder) as well as the characteristics that go with the complex spectrum disorder. individual educational needs (Nel, Nel & Hugo, 2010). Since learners with autism are unique (Ashcroft et al., 2010 ; Wall, 2010) when planning, teachers should plan a support programme that is according to learners' needs or support that would enable a learner to learn (Cater, Asmus & Moss, 2014).

2.2.3 Learners

In this section I will be discussing learners, particularly learners with autism. Learners with autism are unique individuals (Wall, 2010; Lord & Bishop, 2010) whose characteristics and needs truly set them apart in their own way (Ashcroft et al., 2010). They are capable and bright students who can learn and succeed like any other student: they have their own set of needs that require fulfilment in order for them to be successful and productive (Deris, 2012; Snell, Brandy & McLean et al., 2010). Many children with autism experience difficulty in learning speech, (American Psychiatric Association, 2013; Mirenda, 2009) and they experience difficulty in language, words, creativity and imagination usage, and these difficulties significantly hinder understanding and using language for communication (Greenspan, 2006). Communication is the area of difficulty, for learners with autism as some are non-verbal or selectively mute, while others experience echolalia (repetitive speech) (American Psychiatric Association, 2013) and they learn differently from typical children (Sicile-Kira, 2014). Learners with autism are regarded as having learning disabilities and have their own unique characteristics and different learning styles (Sulaiman, Baki & Rahman, 2011). Learning disabilities are problems that affect the brain's ability to receive process, analyse or store information (Friedlander, 2008; National Institute of Health, 2009). However in learners with autism learning disabilities are divided into verbal and non-verbal categories (Friedlander, 2008; Mubaiwa, 2008).

Most parents want their children to be successful despite their disabilities. Generally, parents look to the school system as a means of achieving this (van Wyk & Emeritus, 2010). According to Vygotsky (1978), (a pioneer researcher on constructivism), teaching and learning is a shared activity between a learner and teacher (Donald, Lazarus & Lolwana, 2010). For learners with autism to attend school,

depends on the involvement of parents in their education (Van Wyk & Lemmer, 2009; Leach & Duffy, 2009; Kaiser & Hancock, 2000; Fish, 2006).

Two studies have demonstrated that parents become better consumers of intervention methods for learners with autism by deciding the suitability of various intervention options (Stahmer, Collings & Palinkas, 2005). Furthermore the recent findings by Gallaher et al. (2004) have shown the impact of parental involvement on students in special education programmes. Similarly, the findings of Harniss, Epstein, Bursuck et al. (2001) suggest that other parents wants to participates to the education and intervention programmes of their learners but teachers do not initiate enough communication, and they fail to communicate with parents until problem worsen.

These findings are in contrast with the existing studies which reported lack of parental involvement in their children's learning especially parents of learners with autism. Brueningnsen and Watchorn (2011) argued that the lack of parental involvement results in lack of learning in the classroom, and the implementation of communication intervention programmes, whereas Kim, Lewis, and Bey (2011) indicate that many parents feel ill equipped to address the educational needs of their children since they are unable to understand special education jargon and terminology. Furthermore Goldstein (1993) and Koroth and Egde (1997) assert that many parents feel guilty, intimidated, disenfranchised, and alienated towards education system.

Learners learn best when they are in a familiar setting, surrounded by people with whom they are familiar (Redding, 2005). This means that teachers can work jointly with parents to develop the communication strengths of the learner, and a communication programme can be extended to the home and be monitored by parents (van Wyk & Lemmer, 2009). Early interventions are vital for all learners, particularly for those with special educational needs (Sicile-Kira, 2014). Learners with autism are being defined as having the triad of symptoms and severity of each impairment and the co-operation between the impairment will be presented in a highly individualistic manner (Anthony, 2009).This is in support of what was stated before that no two learners with autism are the same (Ashcroft et al., 2010; Willis, 2009; MacKenzie, 2008; Wall, 2010). As much as there is a copious amount of research on educational interventions for learners with autism, researchers have failed to find a conclusive strategy which is compliant to learners with the autism spectrum disorder (Dawson & Ostrerling, 1997; Lovannone et al, 2003; Jordan & Jones, 2012), which indicates that the researchers since the early nineties are trying to find a solution.

2.2.4 Communication strategies

Teaching strategies are aimed at assessing learner needs and also finding the connection between where the learner is and what the teacher wants them to be (Engelbert, 2013). Numerous teaching strategies have transpired to teach communication and language to learners with autism (Koegel, 2006; Mirenda, 2009; Petscher, Rey & Baily, 2009; Schlosser & Wendt, 2008; Tincani & Zawaacki 2012). Mainly the principles and techniques of applied behaviour analysis (ABA) are incorporated in these teaching strategies (Copper, Heron & Heward, 2007). Teaching strategies for facilitating communication that will be discussed in detail in this study are the: Picture Exchange Communication System (PECS), the Augmentative Alternative System (AAC) and the Visual Aids, Technological speech generated devices.

2.2.5 Schooling context

Schools should be a safe place where children can learn and be nurtured in an emotionally safe environment (Engelbert, 2013; Snowman & Biehler, 2006). Christie (2008, p. 21-38) describes the purpose of schooling, stating that "it provides an environment where teaching and learning can take place (educational goal), and education is about the development of the individual (educational goal)". Subsequently it means that school is a place where the learner becomes enlightened and developed towards being a better person.

Learners with autism benefit from attending school because they are exposed to diverse classroom communication strategies that will equip them to understand the world around them and shape their behaviour (Mirenda, 2009; Raio & Gagie, 2006). ABA is a technique that allows classroom teachers and school therapists to analyse the behaviour of the learner with autism as to why the learner is behaving in a particular fashion and be able to predict what will happen next (Barton & Harn, 2012). This equips teachers and therapists with suitable strategies and tools to design for the learner to change behaviour (Ashcroft et al., 2010). Case-Smith and Arbesman, (2008) assert that a school therapist takes provision of the daily living of a learner with autism and the implementation of educational intervention programmes.

For a school community to function effectively collaboration should be a key objective (Landsberg, 2011). Collaboration is essential in special schools and it includes the principal, the management team, therapists, teachers and teacher aiders (Friend & Cook, 2009). This collaborative community is responsible for decision making and problem solving , shared responsibility for goal setting, a

supportive environment, shared resources, training and valuing every member of a group as an equal partner (Sands et al., 2000). For effective teaching and learning the school management team supply adequate and appropriate non- human resources in classes (Dell, Newton & Petroff, 2011). Teachers working together are able to create shared expectations listen to each other, appreciate each other's knowledge and ask questions (Sapon-Shevin, 2010). Working in teams is more effective in creating the collaborative culture that allows a school to continuously reflect on and improve its practices (Engelbrecht, 2013).

The leadership team co-ordinates the school's efforts as its members gather information, guide the vision making process and communicate the school's progress to all members of the school community (Sapon-Shevin, 2010). The head of department is responsible for phase operations that is the external support about giving the team the resources and training it needs to get the job done (Engelbert, 2013). In addition HODs are responsible for monitoring progress against implementation plans and to invest heavily in capacity building approaches, and significant improvements (Stewart, 2012). According to my personal experience the special school teachers is all of the above mentioned stakeholders and are important figures in monitoring the education of the learners with autism.

The government of South Africa has built special schools to accommodate learners with special needs. Special schools are public schools according to the South African Schools Act No.84 of (1996d), and are governed by school governing bodies. However, the rights of the disabled learners are also protected by international influences. South Africa is among the signatories to the convention Rights of the Child (UNESCO, 2007) which promoted equal education for all children.

2.3 Classification of autism

Autism is classified under the following sub headings. Their respective author(s) have also been mentioned where the classifications are presented. This study will then consider autism spectrum disorder (ASD).

2.3.1 Childhood disintegration disorder

This disorder is a rare condition primarily affecting males, and is also called Heller's syndrome (Willis, 2009). The childhood disintegration disorder becomes visible from birth to age 3. The signs are more visible at 3 years after which children show the signs of digression in language functioning and intellectual and social functioning, which are more similar to symptoms of autistic spectrum disorder (NIH, 2009).

2.3.2 Rett syndrome

Rett syndrome is a unique condition and is a degenerative disorder that affects females (Willis, 2009; Wall, 2010). It is a rare neurological disorder which is characterised by a period of normal development of milestones followed by reduced development, which affects the brain and head growth and includes seizures and intellectual disability (NIH, 2009). The head growth is followed by a multiple of deficits, which occur in the early stage of life. Abnormalities include; head injury, a poorly coordinated gait, head growth deceleration, loss of previously acquired speech, hand writing, and stereotyped hand movements (Moreti & Zoghbi, 2006). In addition (National Library of Medicine, 2008) assert that, the problem areas for children with Rett syndrome are difficulty in expressive language abilities and gross motor skills.

2.3.3 Asperger syndrome

The children with Asperger syndrome have an impairment of social interaction; they are clumsy and present symptoms of lack of fine and gross motor skills. Their condition of autism spectrum disorder is at a higher function rate than in children with ASD. The bulk of studies (e.g. Frith, 1991; Gilberg, 1989; Klin, Volkmar & Pauls, 2005) assert that, learners with Asperger syndrome are intellectually able and verbally fluent. They have poor social interaction skills, though they are regarded as having above average intelligence and possess advanced vocabularies. Children with Asperger syndrome cope well academically since they excel in fields they are engaged in (NIH, 2009; Nash, 2002; Sicile-Kira, 2014). In support of this Willis (2009), posits that children with Asperger syndrome have normal or above normal intelligence and they learn quickly. The exact cause of Asperger syndrome is not yet known although recent research indicates abnormality in the brain (NIH, 2009). Studies assert that both structural and functional differences in the brain of children with Asperger syndrome when compared to brains of those without shows indication that suggests that Asperger syndrome runs in families (Bailey & Montgonery, 2012).

2.3.4 Autistic disorder (AD)

Autism disorder (AD) is regarded as a neurodevelopmental disorder and is diagnosed at an early stage of the child's life (Tchaconas & Andesman, 2013). Autistic disorder usually referred to as 'classic" autism is defined as the most severe form of ASD. The majority of children diagnosed with autistic disorder have an Intelligence Quotient (IQ) score which associates them with mental retardation while one third claimed an above average score in IQ tests (Heflin & Alaimo, 2007).

Children with AD are usually engaged in repetitive actions such as flapping their hands or spinning in circles and stereotyped behaviour (Sicile- Kira, 2014). They also have delays in milestones especially in speech and their communication is not functional (Mirenda, 2009) and they have cognitive levels which categorise them with mental retardation (Heflin & Alaimo, 2007). Children with autism have three areas of difficulty which are characterised by communication deficit, repetitive behaviours, and impairment in social interaction (American Psychiatric Association, 2013; National Institute of Neurological Disorders, 2012).

2.3.5 Autism spectrum disorder (ASD)

The National Institutes of Health (NIH), (2009), defines the autism spectrum disorder (ASD) as a range of complexes which are identified before the age of three years and consist of complex neuro developmental disorders in the brain. Ashcroft et al. (2010 p.2) postulate that, "the term autism is used interchangeably with Pervasive Development Disorder (PDD specified (PDD-NOS) (b) childhood disintegrative disorder, (c) Rett syndrome, (d) Asperger syndrome and (e) Autistic disorder (Heward, 2009). Elsabbagh, Divan, Koh et al. (2012) assert that PDD studies are underway in Australia, Mexico, Finland, Portugal, Iceland Vietnam, Taiwan, Uganda, and in South Africa, according to the report by the systems of autism bodies, and prevalence studies.

The National Information Centre for Children and Youth with Disabilities (NICHCY), asserts that autism and pervasive developmental disorder-NOS (not otherwise specified) are recognised as developmental disabilities with several of the same characteristics in common and during diagnosis some children, but not all, who have autism spectrum disorder or Asperger syndrome fall under this category.

In children with PDD their spectrum cognitive level is not as severe as children with ASD (CDC, 2012). The delays in the milestones of socialisation and communication development are also noted at an earlier age (NIH, 2009). Children with PDD have high cognitive level in abilities, intelligence and behaviour; though learners with autism sometimes present repetitive play skills and limited social skills (Heflin & Alaimo, 2007). The reports for Centres for Diseases Control (2009) conducted in USA highlight that even though the statistic varies and is not a precise count, 500,000 individuals from age 0 to 21years have autistic spectrum disorder.

2.4 Learner's rights to education

There is a solid connection between autism and mental retardation; three quarters of people with autism are also diagnosed with mental retardation but in varying degrees (APA, 2013). In addition

Mash and Wolf (2010) assert that 70% of individuals with ASD have a connection with mental retardation. Due to this condition and their complex of spectrum disorder and triad of impairment (Ashcroft et al., 2010), they perform poorly in schools, (Allen, 2007). Consequently, learners with autism require a high level of support in the classroom as per recommendations of the DoE White Paper 6 (DoE, 2001) and Screening Identification Assessment and Support (SIAS, 2014). Taken from this notion of mental retardation and the complex disorders, ASD learners are regarded as learners with special education needs, that is the reason the majority of them are in special schools while others are in fully serviced schools.

2.4.1 National

The Constitution the Republic of South Africa (RSA, 1996) has made provision for all learners including ASD learners to access school. ASD learners are vulnerable members of society as they are exposed to sexual abuse, emotional abuse, physical abuse and drug abuse and because they have speech deficit and disorders in brain development, members of the community take advantage of them if they are loitering around, yet at school they are protected (Scheeren & Geurts, 2015; Moxham, 2015). Learners with autism due to their communication deficit, combined with mental retardation become an easy target in the community because they are unable to identify report and narrate what has happened should a crime or any form of abuse occur. The South African Constitution has lawfully protected R. S.A. children by section 28 and section 29 in chapter 2 of the Bill of rights (1996) which affirms the rights for children issues such as the right to basic education (section 29). The DoE White Paper 6 (DoE,2001), is committed to equal education for all, most importantly to learners who are experiencing barriers to learning, such as ASD learners.

2.4.2 International

Learners with autism are also protected by international laws. In 1999, the World Conference on Education for All was held in Thailand and Education for all was born (EFA). Most of the international bodies committed themselves to the rights of disabled learners including South Africa. As a signatory to the Rights of a Child, South Africa was among the countries with which the debate took place and made mutual agreements (Sayed, Subrahmanian & Carrim, 2007). The right which was agreed upon was therefore that every learner has a right to a quality education that recognises and advances his or her rights to honour best development.

In 1994, more than 300 countries took a deliberation on the educational provision for learners with special educational needs in Salamanca, under the advocacy of UNESCO and the Spanish Ministry of Education and Science which clearly states that:

"Schools should accommodate all children regardless of their differences in terms of: physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from disadvantaged or marginalized areas or groups." (Paragraph 3)

2.5 Diagnosis of autism for the purpose of classroom organisation

Learners in schools are admitted according to the Act of the admission policy of the DoE as stipulated in South African Schools Act, (SASA) Act 84 of 1996. Admission of learners with special needs has its own criteria to follow during admission; an authentic full assessment report from an educational psychologist is required, for the learner to be admitted, which fully supports that, he/she is diagnosed with autism. Although this process is regarded as unacceptable practices because it is seen as discriminatory it is still practiced in many ways and by many schools (Mittler, 2000). This is done for proper placement of the child in the classroom, to be able to address the medical needs of the learner and for the class teacher to be able to understand the educational requirement of the learner as well as his/her cognitive level. According to the South African Act No. 84 (1996) stipulates that no learner may be refused admission to a school on the grounds of discrimination, non-payment, and others, as long as the child meets the educational requirements as it is every child's right to a basic education (UNESCO, 2007; Section 29 of Bill of Rights, 1996).

Admission of learners with autism is determined by (SIAS policy, 2008) National strategy on Screening Identification, Assessment and Support. The purpose of the policy is to provide a framework for the standardisation of the procedure to identify the needs of the learner to access the level of performance and provide appropriate strategies and programmes for all learners who require additional support to enhance their participation in the classroom.

Special schools do their own internal educational assessment after admission to determine appropriate classroom placement (Schopler & Mesibov, 2013). The diagnosis is also done by a district office educational psychologist while other learners are referred by a private occupational therapist, speech therapist or a psychologist (White, Scahill, Klin et al., 2007). The assessment and diagnosis of learners before admission enable the school to be in a better position to place learners according to their disability and cognitive level (Boyd & Shaw, 2010).

2.6 Classroom expectations for communication purposes

The greatest challenges faced by classroom teachers who deal with learners with autism is to know how to provide communication support to learners in class (Mirenda, 2009) and there is no one best teaching learning method for all (Rao & Gagie, 2006) since learners with autism are unique and exhibit characteristic behaviours in varying degrees (Willis, 2009). It is important for the teacher to view the learner as a person with talents, strengths and potential and to focus on what the learner can learn, rather than what cannot be taught (MacKenzie, 2008). The teacher should concentrate on the strengths of the learners in the classroom and develop them (Mackenzie, 2008).

Each child with ASD is unique and no two children with ASD have the same strengths and weaknesses, (Ashcroft et al, 2010; Willis, 2009; McKenzie, 2008). Similarly Wall (2010, p.6) concurs with the previous scholars and asserts that "no two children with autism will present the same characteristics to the same degree, just as no two children are the same". Willis (2009) highlights that several approaches and strategies to teach learners with autism are widely available, but there is no single method or specific programme to employ since learners with autism are unique in nature and differ in severity of cognitive levels, but some are more successful than others. Learners with autism have their own pattern behaviour which is carried out repeatedly in a rhythm form (Wall, 2010) which results in the child entering into his /her shell and losing concentration on the activities in the classroom (Lee, Odom & Lofting, 2007). It is important for the teacher to understand learners' behaviour because he/she can determine what the learner is trying to say (Sicle-kira, 2014). Given this statement for teachers in class, it is important to remember the communication impairment or disorder learners with autism have.

How do the teachers know what a learner with autism is trying to communicate with behaviour? Wills (2009) indicates that the teachers should be asking themselves the following questions: what is the learner doing immediately before the behaviour? What in the environment (classroom) might have triggered the behaviour or tantrum? What is the learner trying to say through this behaviour and can I predict when the learner will behave in a certain way?

In my view the teacher is supposed to understand every individual in the classroom and be the master of her class, so that effective teaching and learning should take place. The teacher should attend in -service training to get skills and knowledge about the unit he is teaching. The DoE is responsible for arranging workshops to capacitate teachers (Sharma, Forlin & Loreman, 2008). This teacher's role, among others reflects the necessity of the understanding of the knowledge, skills, strategies, methods and approaches which are relevant to the subject area (Lemmer & van Wyk, 2010).

From my experience, the teacher should become an expert in the field of practice, for instance teachers who are teaching learners with autism must be in a position to understand the autism spectrum disorder as well as its characteristics.

Teachers should plan the programme of the curriculum to align with (CAPs) Curriculum Assessment Policy Statement and adapt it to the level of learners with a disability. On the implementation of inclusive education, the White Paper 6 (DoE, 2001) specifically demands curriculum differentiation by means of multi-level instructions (DoE, 2001) Curriculum differentiation is the key classroom teaching strategy for responding to the needs of the learner with diverse learning styles and special needs particular autism, by extending teaching methods and teaching strategies and content of the curriculum (UNESCO, 2004; DoE, 2011). This means that the classroom programme should be well structured to benefit the communication needs of the learner.

2.7 Communication Teaching strategies

Below are basic classroom teaching strategies for facilitating communication with learners with autism which will be explored**.** Learners with autism often have speech delays or communication deficit (Schlosser & Wendit, 2008) consequently a central focus of educational programming is to teach basic communication skills, conversation, and receptive responses (Barton & Harn, 2012).

2.7.1 Picture exchange communication system (PECS)

ASD is a developmental disorder that affects 1out of every 110 children (Centre for Disease Control and Prevention, 2010). Individuals diagnosed as having ASD demonstrate a deficit in communication skills as well as social development. The lack of ability to communicate can be very trying for the child with ASD, parents and teachers (Owens, 2010). There are a number of interventions available to improve communication skills for individuals with ASD, one of which is Picture Exchange Communication System (PECS) (Bondy & Frost, 2011). PECS is a picture based communication system that was designed for use with children diagnosed with ASD and other individuals without means of functional communication. PECS was created to give younger children with autism the opportunity to communicate functionally and purposefully (Charlop, Malmberg & Berquist, 2008) however it has been used successfully with older children and adolescents (Tincani & Devis, 2010). The main aim for PECS is to lend communication support to learners with autism (Bondy & & Frost, 2011). Since PECSs' inception or design, it has been widely adopted in special education settings for children with ASD (Flippin, Rezaka, & Watson, 2010).

Communication problems for learners with autism are not the same since they are unique and their impairment is presented in varying degrees and needs from each individual as some are non-verbal, selective mute, and others are echolalia, (McKenzie 2008; Ashcroft et al., 2010; Willis 2009; Wall, 2010).

Requests (or mands) are regarded as the most vital form of functional communication for young children with autism (Tincani, Bondy & Crozeir, 2011) as requests enable the child to meet his/her basic needs, such as asking for a preferred item or activity (Barton & Harn, 2012). Studies by Ganz and Simpson (2004) and Tincani (2004) where two school aged boys were used assert that PECS increases the level of independent manding (requesting). Furthermore, PECS also has low and high tech AAC strategies available which included VOCAs, (which are called speech generating devices or SGDs) and are an aided AAC strategy in which the user activates a switch on an electronic device to produce a spoken message (van der Meer & Rispoli, 2010). Communication pictures are used whereby a child can point to a specific picture to tell what is happening and what he wants or needs (Willis 2009). Furthermore picture schedules reassure the learner of what is going to be done (ibid).

The main objective of PECS is to teach the child the functional relationship between communications and what is happening in the environment (Charlop-Christy, Malmaberg, Rocha et al., 2007). PECS is a specific type of picture- based communication system which has been used to provide an alternative form of expressive communication for non- verbal children with ASD (Bondy & Frost 2011). Unlike other picture based communication systems, PECS is manualised; having an intervention protocol that consists of six phases of intervention, each with explicit instructional procedures (Bondy & Frost 2011) and is effective for teaching users (learners) to request preferred items and activities.

Previous studies on the use of PECS for learners with ASD have found PECS to be a promising intervention practice for learners with ASD that can lead to functional communication (18 participants) and 3 group studies were included (Flippin, Reszka & Watson, 2010; Ganz, Lung & Simpson, 2010). Children are systematically trained to select picture cards to communicate spontaneously with others, and order them on the sentence strip, then give the sentence strip to another person to initiate communication (Charlop-Christy et al., 2007). Another method: Pictures are kept by the child on a note book (PECS) Board with Velcro then the child is taught to use his/her PECS board and create a "sentence" by selecting a picture card e.g. "I want" card plus "juice" card and then deliver the cards to the communicative partner as a request for desired items (Charlop-Christy et al., 2007).

In addition, Ashcroft et al. (2010, p.149) state that "PECS were instructions by teaching the child to present a visual symbol for a desired item or activity to a communication partner. The usual symbol

actual is given (not shown) to the partner in exchange for the item". Teachers use the pictures to communicate with the learners in the classroom and the learners do the same (Flippin et al., 2010). Many learners with autism do not initiate interactions (Charlop-Christy et al., 2007) but through the PECS system it requires a child to initiate interaction by using a representative picture (Willis, 2009). PECS helps learners with autism to have more meaningful communication interactions (Bondy & Frost, 2011).

PECS is frequently used as a strategy to teach learners with limited speech abilities to communicate (Bondy & Frost, 2011; Ashcroft et al., 2010; Wall (2010). PECS requires few movements from the teacher and the learner does not have to learn sign language (Bondy & Frost, 2011) and is easy to implement, (Bondy & Frost 2011). However, the widespread use had a prior thorough tested investigation in order to support it (Preston & Carter, 2009; Hart & Banda, 2010).

This is supported by numerous researchers who in their findings assert that PECS is a communication system where a learner with communication deficit uses pictures to communicate and to act upon the world around them (Bondy & Frost, 2009; Tincani & Devis, 2010). This system permits the learner to reveal his/her needs without being prompted and helps to communicate by using a picture of an object, the learner wants until eventually the learner is able to form a sentence (Bondy & Frost 2009). PECS in the classroom is used as a schedule to direct learners with ASD to follow a daily routine (feeding, tooth brushing, toilet training) and furthermore becomes able to learn new concepts such as numbers, colours, and reading (Ganz, Simpson & Corbin- Newsome 2008). According to Gans, Earl-Vollrath & Cook (2011) visual based instructions, such as pictures to demonstrate visual images, are preferred by students to follow instruction. Simpson, Myles and Gans (2008) concur and assert that the use of visual methods forms part of instructional approaches and assists learners to focus and maintain attention. Most of the learners that were taught PECS, learned, and developed verbal language (Sicile-Kira, 2014). From my personal experience and observation, learners in the elementary phase particularly learners with autism are fond of bright colourful pictures and become motivated and also excited when they are engaged with them.

PECS is categorised as a well- researched communication teaching strategy with a growing body of small and bigger groups studies (Flippin, Reszka & Watson, 2010; Hart & Banda, 2010; Sulzer-Azaroff, Hoffman, Horton, Bondy, & Frost, 2009 ; Tincani & Devis, 2010). Across the board PECS has been shown to be an effective system for teaching children to request a basic vocabulary of preferred items. Bondy and Frost (2011) assert that the PECS system successfully promoted speech for over 50% of young children who were taught PECS for more than one year who acquired speech

and others did not (Flippin et al., 2010). Furthermore, few studies have examined the effectiveness of PECS in establishing communication (Tincani & Devis, 2010).

In the study by Ganz, Simpson and Corbin-Newsome (2007) where three preschool aged, children were observed, learners with autism mastered the use of PECS and have become an area of interest to teachers and researchers (Ganz et al., 2008 ; Sulzer-Azaroff, Horton, Bondy, & Frost, 2009). In a narrowly focused study of PECS, Tien (2008) asserts that PECS appears to be an effective intervention for improving functional communication skills for participants with ASD. However, in a broad review of all the empirical articles published on the PECS approach, Sulzer-Azaroff et al. (2009) synthesised data from 34 peer-reviewed studies to conclude that PECS is an effective means of training functional communication for individuals with communication deficit.

2.7.2 Strategies to teach vocabulary in order to develop communication

Learners with autism struggle with vocabulary (Henry, 2010). Vocabulary is usually a relative strength for communication for learners with autism, (Kagohara et al., 2010). The researcher's opinion is that in order to communicate (talk) you need to have vocabulary and since communication is a barrier to learners with autism, teaching them to develop vocabulary is of great importance.

Since learners with autism have limited vocabulary, they also have language impairments which are a core skill deficit, (American Psychiatric Association, 2013; Lord & Spencer, 2006). Although estimates vary, reports suggest that up to 50% of adults with autism have no functional communication (Prizant & Wetherby, 2005). Picture naming is also widely used as an educational activity to teach new vocabulary and develop communication in learners with autism (Stonner, Beck, Dennis & Parette, 2011).

2.7.3 Understanding the facilitation of vocabulary strategy

Moore and Calvert (2000) and Barker (2003) indicate that computer based instruction can be ideal for teaching learners with special needs more especially, learners with ASD. The Baldi programme is effective in vocabulary learning with learners with autism (Massaro & Bosser, 2006). Baldi is software that is featured in a language tutorial application to train and develop vocabulary with learners with ASD (ibid). A vocabulary Wizard is used to teach vocabulary lessons (Kagohara et al., 2010). The lesson plan includes both the identification of pictures and production of spoken words (ibid).

Henry (2010) argued that "MY PICTURE BOOK" is a best teaching strategy that can be used for early vocabulary building and each book is individualised using pictures or photos of items that are of

special interest and are familiar to the learner about different topics, names, objects, people (family) and events in daily routine for instance bathing, dressing up and polishing shoes. "Pictures are the primary source of the classroom strategy to facilitate communication because learners like picture (colourful big pictures), and it is the easiest way to communicate with learners with autism" (Henry, 2010, p.23).

WORD WALL ACTIVITY is another best strategy for facilitating communication in learners with autism in class and is always displayed in many elementary classrooms, especially in the foundation phase (Hennery, 2010). It consists of a hanging chart with a collection of words posted on the wall in full view of learners and usually the picture is next to the name (Lund & Troha, 2008). Pictures cement the meaning of the word in the mind of the learner (Mirenda, 2009) and learners with autism respond better to real pictures than to line drawings (Willis, 2009). In addition, decoding symbols, a visual and spatial task, is a unique strength for some children with autism (Friendlander, 2009). Given this it is understood that young children like colourful pictures which consist of objects, events and people who and which are familiar to them. If a learner is daily drilled with words and the associated pictures of familiar objects and actions   the communication ability of the learner is developed because the resources that are used are of interest to him/her (Mirenda, 2009).

In addition teachers use music and rhymes in the classroom to teach and also to facilitate communication with learners with autism. Watnock (2012) posits that the use of vocal imitation in group work can enhance communication and develop basic social skills. Kim, Wingram and Gold (2008), assert that there is a link between music, education and the learning process. Music has a positive impact on communication skills and the general developmental milestones of the child (ibid).

Music therapy has been extensively used in the past four decades as treatment, teaching and training of children with disabilities (Nordoff & Robbins, 2007). According to Walworth (2009) music serves as the ZPD (Vygotsky, 1978) to reflect the child's emerging skills while the teacher or the therapist offers a more sophisticated musical context to move the child gradually beyond her present level of capabilities. In the study by Vaiouli, Grimmet and Ruich (2013) the findings indicate that music and rhymes are responsible for significant improvements in spontaneous eye contact and alternating eye contact. The results are consistent with the study by (Kim et al., 2008) who suggested that music help learners with autism acquire non-verbal and gestural communication.

2.7.4 Augmentative and alternative communication system (AAC).

Learners with autism do not develop functional speech (Willis, 2010). The use of AAC in the form of pictures, photos and cards is commonly used in the classroom but the technical use of AAC like AAC devices with pre-loaded software are not popular in most schools (Shane; Howard; Laubscher et al., 2012).The main aim of introducing AAC devices was to replace pictures, photos and cards but it was noted that they are expensive and difficult to programme and personalise to the educational needs of the learner (Shane et al., 2012).

The Augmentative and Alternative Communication System (AAC) is mostly used as a teaching strategy by teachers in the classroom to enhance communication with learners with autism (Mirenda, 2009). Schlosser and Wendt, (2008), highlight two types of (AAC) approaches. The aided AAC approaches include symbols, non- electronic communication boards, speech generating devices and exchange-based approaches, such as the PECS. The unaided approaches may include "gestures, American Sign Language (ASL), and finger spelling" (Schlosser & Wendit, 2008, p.212). Furthermore unaided AAC does not require the use of any additional resource that is not already present within the individual; examples include manual signs or gestures (ibid).

One benefit of the use of unaided AAC is that the individual is always in possession of the tool needed to communicate (Schloser & Wendit, 2008). Therefore, they always have the means of attempting communication (Mirenda, 2009). A drawback to the use of unaided AAC is that the listener may not be familiar with a manual sign or specific gesture, which may result in a communicative breakdown (Schloser & Wendit, 2008).

Unaided AAC may also present unique challenges for learners with autism, as many present with fine motor and motor imitation difficulties. On the other hand, the use of aided AAC has shown to be successful in promoting functional communication for students with ASD (Bondy & Frost 2011; Gans, Vollrath, Heath & Rispoli et al., 2012). The intention of the AAC system is to, either supplement (augment), learners' existing speech or to act as their primary (alternative) method of expressive communication (Mirenda, 2009).

Schloser and Wendt, (2008), in the report of the National Research Council, (2001), assert that many individuals with autism are candidates for AAC. Consequently for teachers to facilitate communication strategies in the classroom, visual support is required due to communication impairment which is accompanied by a spectrum disorder. AAC is a teaching strategy that is used to develop and support the communication of the learner in the class (Singafoos, O, Reilly, & Lanccioni,

2009). AAC is also a flexible approach that can be used with verbal and non-verbal learners, but who are unable to use functional speech (Singafoos, et al., 2009)

The AAC unaided approach may include direct involvement of a person or objects to communicate for instance pulling a teacher to the door when the student wants to go outside (Ganz, Earles – Vollrath, Manson et al., 2011). In support of this, Mirenda (2009) concurs with the previous scholar that, using body language or gestures to convey meaning for instance shaking the head to express negativity and using picture representation is another strategy to communicate with learners with autism. From my personal experience as a special education teacher, learners with autism learn better if you look them in the eye, touch them, and use your body, and facial expressions.

In the study by Schlosser and Wendit (2008) the results indicated that most studies in AAC intervention showed some gains in speech production in most participants (Tincan, 2004; Tincan, Crozieir & Alazetta, 2006). They indicated that there is no evidence that AAC intervention hinders speech production in children with autism or PDD-NOS. Speech production varies according to individuals by small amounts, if they are noted. This is due to the fact that no two learners with autism are the same (MacKenzie, 2008; Willis, 2009; Wall 2010; Ashcroft et al., 2010).

The above results are concurred by Millar, Light and Schlosser (2006). Similarly Schlosser and Wendt (2008) and other scholars further concur and indicated that AAC application should not be presented in a difficult form but rather be made for specific learners in a specific context and according to the needs of the learner. These considerations are done because learners with autism are unique (MacKenzie, 2008) even though they have mixtures of characteristics and it is important to keep in mind the characteristic of each child when planning a learning programme (Ashcroft et al., 2010). All studies recommended future research to identify child characteristics such as poor speech imitation, object exploration skills and the effect on communication.

2.7.5 Visual support communication strategy

It is important to develop a desire to communicate with learners with autism as well as the skills and procedures that will develop progress in their lives (Mirenda, 2009). Even though there is not one specific best programme or most efficient way of helping children with autism, the importance of visual aids is highly recommended (Rao & Gagie, 2006). Several efforts are implemented which are aimed at giving support to teaching students with intellectual disability and autism to enable them to become more independent (Ayres, 2007).

Visual support is another approach to enhance communication which falls under the AAC strategy which is used in teaching communication to learners with autism (Rao & Gagie, 2006). In addition Simpson, Myles and Gans (2008) assert that the use of visual methods forms part of instructional approaches and classroom management as it assists learners to focus and maintain attention. According to Gans, Earl-Vollrath and Cook (2011) visual based instructions, such as pictures are preferred by students to follow instructions. Visual support mainly uses concrete visual objects and learners get the opportunity to perform the task by themselves and the teacher supervises and only helps if necessary (ibid).This is concurred by Vygotsky's theory in the ZPD whereby the teacher supplies support to learners during class interaction until the learner is independent enough to perform the task (Kathleen, 2000). Visual support is a communicational tool to enhance communication that can be easily used in all settings where the child is, including the class situation (Rao & Gagie, 2006).

The use of AAC in the form of pictures, photos and charts is mainly used in a classroom but the use of AAC in the form of technology, that is AAC devices with pre-loaded software is not popular and in some schools is not used at all (Lubas ,Mitchell, De Leo, 2014; Shane et al., 2012). The main aim of introducing AAC devices was to replace pictures, photos, and charts (Shane et al., 2012) however, it was noted that AAC devices are expensive, difficult to programme and to personalise the educational needs of the learner (Shane et al., 2012). Parents at home and principals at schools experience difficulty in acquiring such AAC devices because they are expensive (De Leo, Gonzales, Battagiri & Leroy, 2011).

Learners with autism naturally have stronger visual processing as compared to auditory processing skills (Friend, 2008; Rao & Gaige, 2006). Providing visual support in the classroom capitalises on the learners' strengths rather that the learners' deficits (MacKenzie, 2008). There are various important approaches available for helping learners with autism to achieve their best in life, for instance Treatment and Education of Autistic and Related –Communication-Handicapped Children (TEACH), Picture Exchange Communication System (PECS) and social stories by Carol Gray which are very useful (Rao & Gaige, 2006). Visual support like Pictures and TEACH attract and hold the learners' attention in the classroom and help the learner to express feelings and thoughts and simplify difficult concepts (Rao & Gaige, 2006).

Research has shown that teachers can use visual support to successfully assist learners with ASD who struggle with communication difficulties (Arthur, Kelly, Singatoos et al., 2008; Cohen & Sloan, 2007; Ganz & Flores, 2008; Ganz & Flores, 2010). Kravits, Kemmer and Potucek, (2002) introduced PECS to Molly, a six year old female diagnosed with autism. PECS was used on Molly at home and school

and the results indicated that Molly demonstrated an increase in icon use and initiation and association.

Dettermer, Simpson, Myles and Grantz (2006) assert that visual support is widely used in schools by teachers to facilitate communication with learners with autism but few studies on using visual strategies by teachers have been published. Simpson (2005) concurs with the previous scholars when he posited that although there is limited research on using visual support, there is a wealth of evidence in favour of it. Simpson (2005) recommends continued research of visual support which will help to educate and confirm to teachers that these are crucial tools in the daily life of a person with autism.

The teacher should explore various strategies and also use resources that are of interest to the learner in order to motivate the learner to perform the task. The manner in which the communication strategy is presented should meet the needs of the learner (Ashcroft et al., 2010). Ashcroft et al. (2010) argued that the teacher in the classroom can use visual support to facilitate communication and to strengthen a verbal message or make it clear by using gestures, body language or pointing to the picture for clarification. Willis (2009) states that a teacher can use a communication picture and a learner can point to specific pictures to tell what is happening, what he needs or what he wants. Learners with autism respond better to real pictures than to line drawings (ibid).

Manual signs are used to process information to learners who have communication impairment (Willis, 2009). Body gestures add meaning to the processed message and should be clear for instance, facial expressions, and eye contact (Ashcroft et al., 2010). For instance frowns are added to accompany the words "I'm disappointed in that behaviour''. For the lesson activity to be fun the teacher arranges classroom materials so that learners can access things they need for teaching (Ashcroft et al., 2010). Body gestures include sign language and it represents visual support in the classroom.

Learners with autism can be taught communication using sign language as an unaided functional communication approach (Rao & Gagie, 2006). Manual signs represent spoken words (Millar et al., 2006). Learners with autism learn communication through signs which are paired with spoken words and the learner receives reinforcement for speaking while signing (Carbone, Sweeney- Kerwin, Attamasio et al., 2010).

The advantage for sign language is that the learner achieves two methods, that is, sign language and speech development (Ticani & Zawacki, 2012). The sign language that is commonly used with learners with autism is Makaton (Tincan & Zawacki, 2012). However, Barton and Harn (2012) argue

that it is rare to teach a learner with autism American Sign Language, where children are taught to perform manual signs. In contrast Willis (2009) suggests that learners with autism can use the same signs used by people who are deaf. Few studies on teaching sign language to learners with autism have been conducted and have called for support of sign language as a communication technique (Schwartz & Nye, 2006), however more research is needed to determine sign language as evidence-based communication intervention for learners with autism (ibid).

2.7.6 Technology as a teaching strategy to facilitate communication

ASD learners are categorised as learners with special needs and the use of information and communication technology (ICT) if planned in a structured way can support, motivate and also stimulate learners with autism to enhance their development (Shane et al., 2012). ICT can support the development of appropriate communication and cognitive skills and lend independence to the learner (Casely-Hayford & Lynch, 2003). In previous years the most used technology for ASD learners for interventions was limited only to videotapes for instructional video modelling (Bellin & Akullian 2007). However now the world has become more advanced in technology this has provided the education system the opportunity to develop a new means to communicate with learners with autism. Augmentative and Alternate Communication (AAC) strategies are the first which began to explore the use of technology for individuals with ASD (Shane, Haubscher & Schlosser et al., 2012).

Tools that are used to facilitate communication in the classroom with learners with autism which are low-tech include non-electronic communication boards, line magnifiers, switch operated toys and graphs are widely used to enhance communication in ASD learners (Wendt, 2009). The baseline technical tools for enhancing communication include pointing-based (learner points to a symbol in order to communicate), the other one is exchange-based (the learner hands over graphic symbols in exchange for an object or activity delivered by the communication partner) (Sigafoos, Reilly, Lancloni & Schlosser, 2007).

Laptops, Apple iPad and Google Android, are widely available as portable hardware which runs specialised AAC "apps" which exist for AAC users with ASD, (Shane et al., 2012). Speech-generating devices (SGDs) are now widely used in the autism family to enhance communication (van der Meer & Rispoli, 2010). SGDs, consist of a computer based speech-synthesising unit and visual display which are configured with a number of icons (Schlosser, Singafoos, & Koul, 2009), which are presented to meet the needs of an individual with autism (Matson, Kozlowski, & Shoemaker, 2010). A new type of SGD consists of an iPod Touch or iPad with Proloquo2Go software (Sennott & Bowker, 2009) which allows an iPod or iPad to be used as an SGD (Kagohara, Achmandi, van der Meer et al.,

2012).Various advantages of the new SGD were noted (Mirenda, 2009) which include: (a) the large set of icons, (b) high-quality of synthesised voice output, (c) portable and light weight, due to its size, and (d) low cost. Hess, Morriet, Heflin and Ivey (2008) in Georgia in United States of America posit that the use of an auditory strategy is effective to be used in teaching learners with autism. Similarly, Dettmer, Simpson, Myles et al., (2000) in a study which consists of two elementary-age boys with autism, show the evidence that teachers use auditory tasks or methods to develop communication with learners with autism.

There are few studies till recently that has aimed to teach individuals with ASD to use aforementioned types of SGSs (Flores, Musgrove & Renner et al., 2012; Kagohara et al., 2010; van der Meer et al., 2011). Learners with autism learn best if they see and feel the object through individualisation, structure and visual support (Attwood, 2000). However, there is a limited provision of existing software design for users with autism which tend not to directly address the autistic condition as such (Moore & Taylor, 2000). Most researchers have come up with the idea of improving the quality of the software programme for CBI to individuals with ASD (Ramdoss, Lang, Mulloy et al., 2011). However though, there are a few reviews of the research literature on the use of CBI for ASD learners that have been conducted on learners with autism who develop their natural strengths in visual processing, and have strong prediction skills towards electronic media (Shane & Albert, 2008). This means learners with ASD that take the time to see and feel the visual aid seem not to forget as easily as if it was just heard (Rao & Gaige, 2006).

The use of computerised intervention in class to ASD learners permits the development of communication skills to a high standard especially if they are conducted in a controlled environment (Wendit, 2009) while simultaneously allowing the learner to work at his or her own pace and ability (Golan, Baron-Cohen & Smith-Myles, 2007). Computerised programmes and electronic devices are particularly beneficial to the ASD population, and they should be conducted in the environment they are familiar with, given that, people with autism often experience discomfort with unfamiliar social environments (Charlop-Christy, Le & Freeman, 2000). This means that the classroom teacher is not supposed to take learners to the school media centre but conduct the lesson in the classroom with which learners are familiar.

Computer and electronic devices that have been installed with educational communication programmes encourage an individual to be an active agent in his or her education by direct manipulation (William & Coughlan, 2002). For teachers in the classroom to apply technology communication strategies is very complex because it requires a low ratio of teacher/learner and

therapist/learner to facilitate communication procedures to learners with autism and also requires more hours per week (Lang, Machalieck, Rispoli & Regester, 2009).

However, studies have shown that there is still limited support in the use of computerised programmes and electronic devices, (Wainer & Ingersoll, 2011). Given this lack of support, it is a wake-up call for schools, pre-schools and nursery schools to start engaging in the usage of computer based programmes and other technological devices to teach in the classroom. The visual learning dimension incorporated in digital technologies is supportive of the way in which information is encoded to learners with autism (Shane & Ducoff, 2008). Electronic screen media which are used to facilitate communication to learners with autism develop the learning of basic communication competencies (Sansosti & Powel- Smith, 2008).

A body of studies has asserted that high technology (computer based intervention) has indicated improvement in communication in learners with autism (Ramdos, Lang Mullay et al., 2010; van Meer & Rispol, 2010; Banda, Copple, Koul et al., 2010). All studies recommended future research in different aspects for instance, studies that will focus on direct and systematic replications across different participants in all aspects which are associated with impairments. There is only one problem with the implementation of technology as a strategy to facilitate in the classroom, of learners with autism is that the teachers themselves; they are not technologically capacitated to use it (More & Taylor, 2000). In my opinion, this setback lies with the educational authorities who need to train teachers and also provide necessary resources for special schools. One cannot expect teachers to be able to provide adequate support to learners unless they have been trained to do so. Research has shown that most teachers prefer low technology strategies over high-technology teaching strategies that are often perceived as hard to implement (Judge, 2006).

2.8. Continental Prevalence of autism in relation to classroom and school context

This section of the review presents the prevalence of autism with continental positions in relation to the classroom

Statistics regarding the prevalence of autism in Africa and other regions of the world are either unavailable or preliminary (Asalbagh, David, Kho et al., 2012). There was a preliminary report about autism in the 1970s but the findings of the studies were never confirmed. This also serves as evidence that autism in Africa does exist. There is a recent study on autism in Africa (Bakare & Munir, 2011) on statistic and prevalence but it is not published. The fact that the "data available from clinical case

registries in large academic facilities has gone unpublished, leaves no data on the prevalence for ASD have received diminutive attention as public priority" (Grinker, Chambers, Njongwe, Kauchali et al., 2012, p5). Apart from Lotters's (1978) studies in South African countries few studies about ASD in Africa have been published and are not representative of South African children (Ametepee & Chitiyo, 2009).

In the USA the prevalence indicates that the number of public schools' children diagnosed with ASD increased by 600% from 1994-2005 (US Department of Education). In the study which did not include special schools but mainstream learners in Cardiff under Wales local education authority, the findings revealed the prevalence of ASD as 20.2 of every 10 000. In addition if the number is added to the prevalence of autism learners in special schools the overall prevalence of ASD learners to high functioning individuals is of 25 per 10 000 (Webb, Morey, Thompsen et al., 2003).

This is however in contrast with the study by Gilbert (1998) in Karlstad using a diagnosis criteria, that the findings for ASD learners were high on 60 out of every 10 000 (Kadesjo, Gillberg & Hagberg, 1999). In South Korea a study by Kim, Leventhal, Koh et al. (2011) on 7-12 years learners in special schools reveal the prevalence of ASD was estimated to be 2.64% and the male to female ratio were 2.5:1 and 5.1:1. The study by Pinborough-Zimmerman, Bakian, Fombonne et al. (2011) on school learners with autism aged 4-6 years, the prevalence increased by 100% with 1in 7 learners aged eight identified with ASD by 2008. The study concluded that special education contribution to overall prevalence to proportion of health cases did not change. In addition the study findings reveal the growth in number of ASD learners in special schools parallels the growth in ASD in health diagnosed and noted is the large gap in health administration prevalence (APA, 2010).

2.9 Theoretical framework

The study was underpinned with one major theory, cognitive constructivism under two main concepts of scaffolding and the Zone of Proximal Development (ZPD) by Vygotsky (1978) because it is learner and teacher centred. It investigated the exploration of classroom communication strategies with learners with autism and teaching learners with autism in the class calls for continuous repetition and reinforcement of tasks with the help of communication.

This theory is regarded as learner centred because the learner is the key recipient of learning. The learner assumes the responsibility for learning while the teacher is responsible for facilitating, offering guidance and supporting and emphasizing, thus the power in the classroom shifts to the learner (Donald et al., 2010). In addition Powel and Kilana (2009) assert that Vygotsky learning theory is

learner centred because when teaching learners with autism, the teacher has to follow learner's passion and capitalises on their strengths. Concurring to the previous statements (McKenzie, 2008) argued that in learner centred approach there is always an interactive learning taking place, when the teacher is facilitating, guiding, directing and instructing the learner until the learner has finally mastered the task.

Newman (2006) and Swart and Pettiphere (2011) define theoretical framework as a very general theoretical system with assumptions concepts specific to social theories, while Henning et al., (2005) define theoretical framework as the lens through which the different people can view the world. This means different people can view the world in different ways depending on their research topic and purpose and focus of their study. The study requires a theoretical framework in order to inform the findings.

2.9.1 Scaffolding and the zone of proximal development concept: Vygotsky (1978)

Classroom activities advocate having learners working in small groups, or alone with the help or guidance of a teacher in order to maximise their opportunities for participation which will help to promote communication (Christie, 2008; Johnson & Lazarus, 2008). Acting as a guide and facilitator, the teacher is responsible for establishing situations that are likely to promote communication by using diverse teaching strategies in a classroom (Christie, 2008; Engelbecht, 2013). The role of the learner is that of the listener and active participant while the teacher interacts with them as they are actively engaged in the learning activity (Christie, 2008; Lee et al., 2007). The teacher has the opportunity to repeat, rephrase emphasise, work with learners and observe (Donald, Lazarus & Lolwana, 2010).

The study sought to investigate how the teacher facilitated classroom strategies to communicate with learners with autism. Various teaching strategies and approaches are used to enhance communication to learners with autism. In the view of Santrock (2009) the best teaching approach is the instructional approach. There are two main approaches that determine how teachers teach. For instance: constructivism and direct instruction, and learners with autism best suit the constructivist approach because it is a learner centred approach that emphasises the importance of individuals, actively constructing their knowledge and understanding with the guidance of the teacher and follow instructions (Donald et al., 2010).

Cognitive constructivism is a highly effective method of teaching that all learners can benefit from since collaboration and social interaction are incorporated. Vygotsky, the founder father of social constructivism believed in social interaction and that it was an integral part of teaching (Donald et al.,

2010). In addition, understanding Vygotsky's theories or building a classroom where interaction is prominent helps develop effective teaching and learning therefore, classrooms need to promote good collaborating and communication. Good and functional communication will result in good social interaction (Powell & Kalina, 2009), as illustrated in the Zone of Proximal Development (ZPD) diagram in Figure 1.
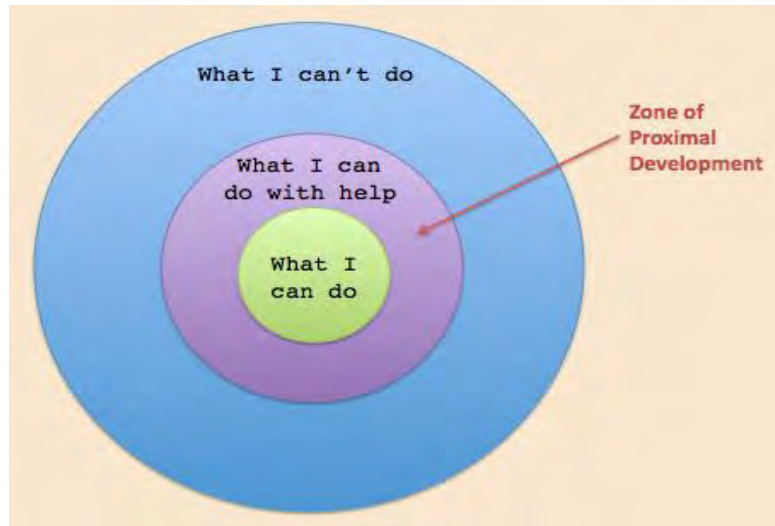
Figure 2.1: Diagram illustrating the different zones of the ZPD as they relate to classroom interaction

Engelbrecht (2013, p. 40) contests that "ZPD, according to Vygotsky's ZPD theory, productive learning only occurs at the critical point at which a learner is challenged to take his or her understanding into his or her higher level". He furthermore argues that the zone is categorised as the space where the learner cannot perform or understand the task alone but needs the guidance of the teacher.

Donald et al., (2010) posit that ZPD is a space that lies beyond a child's present understanding. It is a critical space where a child cannot do the work alone but needs the assistance of a teacher and through collaboration and interaction the task is performed (Engelbecht, 2013). Given this indication, ASD learners, as has been mentioned previously who have a brain developmental disorder which affects their major areas such as communication development, social interaction and behaviour; find it difficult to be independent in class and to master learning tasks as compared to normal learners. The best strategy to make them cope in the classroom is for the teacher to provide guidance and support throughout the activity or task during the course of the lesson.

Berk and Winster (1995) indicate that for ZPD concept to be well implemented in the classroom situation, it must constitute two features, subjectivity and social support. In subjectivity, the teacher and the learner begin the task (subject matter) in a different understanding, which means that the teacher has the knowing and the learner does not. Secondly, the teacher provides social support to the learner during the course of the lesson. The support and the guidance develop the learner's level of performance until the learner is independent to perform the particular task. Donald et al. (2010) postulate that the content of the subject and how the teacher is facilitating it is important because the interaction between the teacher and the learner has to be effective and to be repeated continuously until the learner understands.

This theory was relevant to the study because it is learner centred and suitable for learners with special needs education because it involves the interaction between the learner and the teacher (Pratt, Collins & Selinger, 2001) and the task relies on the support and the guidance of the teacher throughout the lesson, and it is ongoing. ASD learners due to their complex spectrum condition have a communication deficit. This theory framed this study because it simplified and also enhanced the facilitation of classroom communication strategies with learners with autism.

Pratt et al. (2001) posit that Vygotsky, when describing the zone of proximal development indicates that the main objective to implement teaching strategies in the classroom is to assess learners' needs and also to discover the connection between where the learner is and where the teacher wants them to be. It means that through facilitating of the teaching strategies in the classroom, it puts the teacher in a position to control the pace and the particular educational needs of the learner, for instance the learner may need an individualised programme, therapy lessons from the school speech therapist or an occupational therapist.

 When the task falls within the zone of proximal development, the teacher should plan a differentiated lesson plan, and break the task into simpler stages in order to meet the educational needs of the learner (Donald et al., 2010). The focus of the teacher should be to plan, support and remove support when necessary, meaning that when the learner is able to perform the task almost independently the teacher gradually stops providing support (Engelbrecht, 2013) as before.

This shared activity between the learner and the teacher makes the learner become an effective and independent participant in the classroom. In learners with autism not all learners can become independent due to their level of impairments of the spectrum disorder because the characteristics are presented in varying degree of severity which results in different levels of functioning (Ashcroft et al., 2010; Donald et al., 2010; McKenzie, 2008; Wall, 2010).

The theoretical framework was appropriate to the study because of its emphasis is on learners' active participation and heightened recognition given to the social nature of learning (Liu & Matthews, 2005). In addition Mc Leod (2010) argued that ZPD is determined through problem solving under adult [teacher] guidance or in collaboration with more capable peer. In this study, learners with autism due to their complex condition they require an assistance of the teacher who understands them throughout the lesson (Ashcroft et al., 2010). Supporting the statement Donald et al., (2010) posit that Vygotsky believed that knowledge is actively and continuously constructed and reconstructed as the individual progresses to higher levels of understanding. Furthermore Vygotsky views interaction of learners with teachers as an effective way of developing skills and strategies (Donald et al., 2010).In this study teachers and learners with autism were actively participating in collaboration while the communication strategies were facilitated through gestures, sign language, demonstration, rhymes and songs. In addition Vygotsky also believed that when the learner does not understand the particular task [ZPD] it is through the help of the teacher the learner will get enough of a boost to achieve the task (Wood, Burner & Ross, 1976). Learners with autism depend on the teacher and the collaboration of other stake holders to teach, for instance school therapists, parents and teacher aiders.

2.9.2 Influence of Vygotsky's theories

Davydov and Stephen (1995) assert that according to the American Educational Association, Vygotsky's theory had much influence on educators, scientists and psychologists. His ideas and theories have influenced a number of psychologists and educationalists. He influenced a Russian Philosopher and psychologist, Evadl'enkov who developed similar approaches (cultural activities) like Vygotsky during 1960s-1980s. These concepts were well presented in the book *Philosophy and Culture* which was published in Moscow in 1991 as part of the prestigious series *Thinkers of the 20th Century*. They further argued that Vygotsky's theory made an impact on the teaching and learning profession. The theory advocates learning and its effects on children's development. The concept of ZPD and scaffolding, in theory and practice of education now come directly into contact in the issue of developing students, since both scholars and practitioners are now using these concepts quite often in the educational department.

The concept of ZPD was adopted from psychology into education practice. It is now used in classroom situations, mostly in the foundation phases (Davydov & Kerr, 1995). This theory was appropriate to this study because the study dealt with the foundation phase learners who are mentally

challenged and are diagnosed with autism spectrum disorder and in their education they require guidance and support of the teacher throughout the lesson.

The concept of ZPD was considered to be the most appropriate in this study because it is learner centred which accommodates the learners' needs in an autistic classroom. Also, it categorises the learning phases of the learner into stages where teaching and learning objectives are being scaffolder by the teacher. In addition, learners with autism need special care and support in their learning and through the use of this theory, an understanding of the learning task; when broken into smaller manageable components such as learning objectives would be best understood. According to Donald et al. (2010) verbal cues, prompts and visual aids are used to assist and guide the learner to master the skill of communication in the classroom.

The critique of this theory is that, learners with autism require teachers who are specialists in their units, and the school should be well resourced so that the teachers can have the appropriate resources to teach the learners, without these, the theory, cannot be complete and accurate if that aspect is not taken into consideration. It also requires the class teacher to be observant in the classroom, for instance, to be able to know the cognitive level and the strengths and weaknesses of every learner so that it becomes easy for the teacher to determine the kind of support to be offered to each individual learner, for how much and for how long (Powel & Kilana, 2009).

This theory creates effective interaction between the learners and the teacher; it gives the teacher, the opportunity to understand each learner's weaknesses and strengths and to develop on that. It also provides the teacher the opportunity to give effective assistance that will enable learners with autism to perform at a higher level than they would do otherwise (Donald et al., 2010). McKenzie, (2008); Wall, (2010), and Ashcroft et al. (2010) highlight that, no two learners with autism are the same and they vary according to the degree of severity. This is confirmed by Berk and Winsler (1995) when they state that two learners can differ completely when performing a task in the classroom in ZPD, one learner may be good and the other not and may need the assistance of the teacher all the way throughout the task performance, therefore the concept of ZPD is important for identifying and assessing each learner's readiness to benefit from instruction in the classroom.

It is understood that in Vygotsky's view, how mediation happens is important and the process of ZPD must connect with the learner to be effective (Donald et al., 2010). For this to take place successfully it is important for both teacher and the learner to be fully engaged in the process of learning and teaching. They both should be willing participants which is not always the case with learners with autism [at times the learner fails to cope in the classroom due to chronic medication he is taking; my

own observation and experience as special school teacher]. Lastly the process requires the learner to develop new ways of thinking which is seldom found in learners with autism, because they have a low cognitive level of grasping tasks.

My arguments as a special education teacher, teaching learners with to autism is a challenge that requires the teacher to be patient and have passion for the teaching which also requires the teacher to fully understand the educational special needs of the learner, since the degree of severity of each of the major impairment varies considerably from individual to individual, (MacKenzie, 2008; Ashcroft at al., 2010). In addition, my view is that, the teacher should concentrate on what the learner can learn and give support and guidance until the task or skill is fully mastered.

Although initially this theory was used for understanding and explaining in mainstream teaching and learning strategies in the classroom, for the case of learners with autism the theory is more useful for the purpose of facilitating and offering support and guidance step by step throughout until the learners understands and most importantly it promotes active communication and participation in the classroom, due to the special educational needs of learners with autism. In particular the theory provided a framework through which the facilitation process of the teacher could be best understood. The ZPD concept guides the facilitation process of the teachers as it explains how one learning outcome or objective was attained to the next leading outcome or objective.

Moreover, the use of scaffolding concept provides a detailed framework in understanding the participant's facilitation activities. Through scaffolding therefore, the facilitation of learning units by the teachers was fully understood as one concept of learning was gradually being facilitated to the next. This theory was therefore considered to be of much importance to the study of explaining and facilitating communication as a form of teaching strategy as it could accommodate the special learning needs of learners with autism and also the learning outcomes of the teacher or curriculum.

Teaching strategies are aimed at assessing learners' needs and also determining where the learner is and where the teacher wants the learner to be (Vygotsky 1978) ZPD and they crossover the knowledge in simplest methods using visual objects, and teachers give learners meaningful teaching and examples (Pratt, Collin & Silinger, 2001).

2.10. Conclusion

The main focus of this chapter was presented in two sections. The first section was on the review of literature that was concerned with autism and how it related to classroom communication across the world. Types of autism were also discussed to show the dynamics of the disorder .The second part of

the review was underpinned by one major theory Vygotsky's (1978) cognitive constructivism and the main concepts of ZPD and scaffolding. According to Powel and Kalina (2009) teachers need to be familiar with these theories because it is possible to understand and apply constructivist strategies and practices in the classroom. The following chapter will deal with research design and methodology of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

This chapter discusses the research design and methodology.

This chapter begins with a detailed account of the research paradigm and design employed in this study. Furthermore, the sampling procedure employed, the data generation process and data analysis methods are discussed. This chapter also discusses the measures of the ethical consideration and limitations of the study.

3.2. Research Design

Research design is a blue print or road map that guided the study. This plan is a picture of the link between the philosophical paradigm, approach (es)-method(s) - data generation techniques-data analysis, and discussion adopted in a particular study. This conceptualisation of the principles and procedures of the different elements of the research design is what forms the methodology of research project (Rule & John, 2011). Bertram and Christiansen (2014) concur with this view, emphasising the "fitness for purpose" approach. This essentially is the interrelatedness of the data generation to the research question and the conclusion. This study adopted a qualitative approach because it aimed to achieve an in-depth knowledge and understanding of the facilitation of communication strategies employed by classroom teachers of learners with autism. Perrie6 and Bellamy (2012) concur and indicate that a research design is a more detailed statement of the study and is presented in a logical manner with a detailed layout which is presented step by step on how the inference will proceed. Furthermore, research design is described as a strategic framework action which acts as a bridge between (Cohen, Manion & Morrison, 2011) the research questions and the implementation of the research. The following are crucial roles that research design plays as a bridge between the research questions and execution of the research:

- STAGE 1: defining the research question
- STAGE 2: designing the research
- STAGE 3: data generation.
- STAGE 4: data analysis and,
- STAGE 5: writing a research report (Durrheim, 2006, p.6).

3.3. Research Approach

The study was conducted using a qualitative approach. Cooper and Schinder (2006, p.296) define qualitative research as "an array of interpretive techniques which seek to describe, decode, translate, and otherwise come into terms with the meaning, not the frequency, of certain more or less natural occurring phenomena in the social world". Bogdon and Biklen (2007) posit that the qualitative approach is a descriptive method and the data generated is taking the form of words rather than measuring numbers. Bogdon and Biklen (2007, p.7) state that "in qualitative research meaning is of essential concern to the qualitative approach". In this study the researcher's main aim was to gain meaning of what was happening in the classrooms of learners with autism, and how this was happening by using semi- structured interviews and classroom observation in order to get an in-depth knowledge from a natural setting and first-hand information from classroom teachers who have experience in teaching learners with autism. A qualitative approach was most suitable for this study.

Qualitative research is designed to tell the researcher how and why things happen as they do (Visagie, 2010). Qualitative research is a form of social inquiry that focuses on the way people interpret and make sense of their experience and the world in which they live. Furthermore qualitative research, according to Creswell, (2012) has the following characteristics:

- Exploring a problem and developing a detailed understanding of a central phenomenon.
- Having a literature review play a minor role, but justify the problem.
- Stating the purpose and research questions in a general and broad way so as to understand the participant's experience.
- Collecting data based on words from a small number of individuals so that the participants' views are obtained.
- Analysing the data for description and themes using text analysis and interpreting the larger meaning of the findings.
- Writing the report using flexible, emerging structures and evaluative criteria, and including the researcher's subjective reflexivity and bias (p.6).

In this study, the above mentioned characteristics do relate to the current study. Data was obtained through observation in the classrooms and semi –structured interviews from natural settings and the study focused on the exploration of classroom strategies to facilitate communication with learners with autism by participants' action and behaviour.

In this study the researcher had utilised the qualitative approach to generate data; a descriptive method of generating data was employed from various methods, which was observation intervention and semi -structured interviews (Bartram & Christiansen, 2014).

3.4. Research Paradigms

A research paradigm constitutes a particular world view that defines, for the researchers who hold this view, what is acceptable to research and how this should be performed (Bertram & Christiansen, 2014). In addition paradigms are regarded as modes of looking at reality and they are the frames of reference we use to put straight our observation and reasoning (Babbie, 2013). Researchers position themselves in different paradigms; my research is positioned within the interpretive paradigm. The interpretive view is one that holds that the social world cannot be understood by applying research principles adopted from natural science (Blumber, Cooper & Schindler, 2008) it therefore attempts to present how participants make choices in social situations (Kumar,2011). The researcher as an interpretivist seeks to employ a systematic analysis approach of meaningful action through the direct detailed observation of classroom teachers of learners with autism in the classroom situation in order to arrive at understandings and interpretations of how people create and maintain their social worlds (Neuwman, 2011). In addition, Cohen and Crabtree (2008) highlight that interpretivist positions are founded on the theoretical belief that reality is socially constructed; and to Visagie (2010) the interpretive paradigm is based on the following assumptions:

- "Exploration of why people have different experiences and to understand how these differences result in different constructions and meanings people give to the social world.
- Making sense of how people interpret the social world.
- Includes a process of subjective interpretation.
- Acknowledges the specific motivations and interests of participants.
- The researcher participates because meaning can be created through interaction.
- The nature of reality to be studied is the internal reality of subjective experience.
- The nature of the relationship between the researcher and what is researched is empathetic and the researcher plays a role of an intersubjective observer.
- The researcher usually makes use of interactional, descriptive and qualitative research studies" (p.6).

As the interpretive researcher my role was to describe and interpret data that had generated through interviews and observations from the classroom of learners diagnosed with autism. Neuman, (2011) describes the interpretive approach as the research study problem that is trying to get meanings and develop a deep understanding of how, why and what parts relate to the phenomena, thus seeking linkages to the parts. This study was learner centred in the classroom; it sought to explore the interaction between the teacher and the learner in the classroom. In addition the interpretive approach study interacts with people, community, and environment; it is an on-going process and deals with people who are engaged in the phenomenon who also have the experience (Neuman, 2011).

In this study the researcher was dealing with participants who are classroom teachers of learners with autism who were hands on in the teaching and learning process. Cohen, Manion and Morrison (2011) highlight that interpretive approaches focus on effect, behaviour with meaning and reciprocal action with one another and experiences. Consequently, the study gave meaning and understanding to the exploration of classroom strategies for facilitating communication with learners with autism. The definition was relevant to my study as my questions are interpretive in nature.

3.5. Case Study

This study was positioned within the interpretive case study approach. The researcher used a case study as a general approach to research an in depth enquiry into how classroom teachers of learners with autism facilitate communication strategies to learners with autism.

This qualitative case study is an approach to research that facilitates exploration of a phenomenon with its context using a variety of data sources which ensures that the issue is not explored through one lens but rather through a variety of lenses (Yin, 2009). A case study gives a clear picture of the situation (Yin 2009) and simplifies categories for people to understand the situation and also simplifies the fitting of puzzles together perfectly. Struwing and Stead, (2004) describe a case study as an approach that involves an intensive study of a relative smaller number of situations or cases. In this study the case was the classroom teachers of learners with autism in the Umlazi District. The case study approach is a comprehensive exploration of an extensive amount of information about very few components for one period or across multiples of time (Neuman, 2011). This study sought:

- To identify classroom strategies for facilitating communication with learners with autism.
- To understand classroom resources used for facilitating communication with learners with autism.

Case studies are a style of research often used by researchers in the interpretivist paradigm (Christiansen et al., 2010). It involves an in-depth study of an entity with some defined boundedness (Creswell, 2007) and within its real life context (Yin, 2003; 2009) e.g. an individual unit such as students, a family a school or an entire culture. The researcher in this study was aiming at gaining greater insight and understanding of the dynamics of classroom strategies for communicating with learners with autism (Niewenhuis, 2012).Yin, (2009) indicate that in a case study the researcher's interest is to understand the real life phenomenon and the in-depth context of the situation.

Given the interpretive stance adopted in this research and the nature of the research questions, the researcher believes that the case study approach was the most appropriate research strategy for this study because of its advantages in revealing in detail the unique perceptions and concerns for individual participants in the classroom situation which would have been lost in quantitative or experimental strategies. The researcher took a decision to employ an interpretive case study because in depth detailed knowledge was required on how classroom teachers facilitate communication with learners with autism. The case study design is particularly well suited to situations where it is very difficult to separate a phenomenon's variables from its context (Yin, 2003; Yin, 2009).

The research design of this study is a descriptive and interpretive case study that is analysed largely through qualitative methods. Qualitative researchers tend to analyse their data inductively (Yin, 2009). This study is a descriptive case study (Rule & John, 2011), and it presents a complete description of a phenomenon within its content. The researcher could have used various methods of case studies but due to the research questions and the content a multiple case study which involves more than one case study was adopted (Day- Ashley, 2012). The two cases that were similar and associated in terms of teaching and learning were the two special schools. The sampling of these schools is described below.

3.6. Sampling

Sampling implicates making decisions about which people, settings, events or behaviour to include in the study (Bertam & Christiansen, 2014).In this case the researcher was supposed to choose special schools in order to get classroom teachers of learners with autism. In addition Visagie (2010) defines sampling as a selection of elements in a population that will represent the whole and that will answer the research questions and enables the researcher to draw the conclusions.

3.6.1. The Study Site

Based on the above purposeful sampling was chosen to two schools with learners with autism in the Umlazi District in Kwa-Zulu Natal. Umlazi is a township south west of Durban and was designed to

be the largest township ever built inside one of the South African Bantustans (retrieved from www.durban.gov.za/discover/history.com.).

For management and control purposes schools in the surrounding area through demarcation that did not necessarily fall within the Umlazi Township, fell in the Umlazi District. This District comprises of four main circuits; Durban Central Circuit, Chatsworth Circuit, Phumelela Circuit and Umbumbulu Circuit. The two schools which were selected for the study are under Durban Central. KwaZulu-Natal province has seventy two special schools and the Umlazi District has twenty one special schools (extracted from www.umlazidistrict.co.za). Purposeful sampling is done with the specific aim to reach a specific goal (Maree & Petersen, 2007) and sites that are relevant to the research questions are selected. In purposive sampling the researcher selects individuals because they are accessible, advantageous to use, and constitute the characteristics the investigator seeks to study (Creswell, 2012).Since the study is qualitative and positioned within the interpretive paradigm it does not draw a large sample, only in-depth rich –cases are selected (Neuman, 2010).

3.6.2. Brief Description of the Sampled Schools

The selected schools are Sibongile Special School situated in Montclair, and Siphosethu Special School, situated in Newlands, Durban, KwaZulu-Natal. The researcher selected these schools because they hold rich authentic data to investigate the study.

Sibongile Special School (Pseudonym)

All Special Schools fall under the public school act (South African Act no. 84 of 1996d; section 28). The school has 840 learners within which some of them are learners diagnosed with autism and 40 teaching staff. The school has five units of autism classes, and five teachers who are employed as classroom teachers of learners with autism. The operation of the school is based on the decisions of the school governing body (SGB) and school management team (SMT).The school has almost all the basic facilities for catering for learners with disabilities, e.g. school transport, feeding programme (National School Nutrition Programme), school nurse, occupational therapist and speech therapist. The buildings and premises of the school are well maintained.

Siphosethu Special School (Pseudonym)

Siphosethu is a public school with an enrolment of 330 learners; within which some of them are learners diagnosed with autism. The school has 21 teachers within which 5 of them are classroom teachers with autism and one occupational therapist. Each classroom has cubicles and resources for

teachers to use to teach learners with autism. The school takes responsibility to transport learners to and from home, has a feeding programme (National School Nutrition Programme), and has employed important stakeholders needed in a special school e.g. educational psychologist, speech therapist and occupational therapist. The buildings of the school are well maintained.

3.6.3. Participant settings

The study was undertaken in two settings at Sibongile Special School and Siphosethu Special School in the Umlazi District in the classroom of learners with autism (observation) and with teachers of learners with autism through the interviews. I have named the schools in which I conducted my research Sibongile Special School and Siphosethu Special School for the purpose of anonymity. Purposive sampling was used to select the participants from each school because the researcher seeks to have people that are hands on and have experience in teaching learners with autism (Neuman, 2011). The classroom teachers of learners diagnosed with autism were participants in the study. All participants entered voluntarily in participating in the study. The study was also gender sensitive as it consists of male and female participants in both schools. A gender sensitive research is research that pays attention (Forbes & Weiner, 2013) to similarities and differences between men and women's experiences and their view point.

PROFILE OF INTERVIEWS

3.6.4. Brief Description of Siphosethu Special School Participants

The teachers were assembled for this study by purposeful sampling. The profile of the interviewees is presented in Figure 3.1

SIPHOSETHU SPECIAL SCHOOL	GENDER	QUALIFICATION	NUMBER OF YEARS	Race	NUMBER OF YEARS TEACHING LEARNERS WITH AUTISM	STATUS
AKHONA	FEMALE	NPDE	3 YEARS	A	1 YEAR	LO
ALICE	FEMALE	MASTERS (ED PSYCHOLOGY)	3 YEARS	I	10 YEARS	LO
ZODWA	FEMAL	NPDE, DIP. ABET	7 YEARS	A	4 YEARS	FOUNDATION PHASE
MBALI	FEMALE	PGCE.BSOC SCI PSYCHOLOGY	2 YEARS	A	2 YEARS	FOUNDATION PHASE
THOLAKELE	FEMALE	B.A. HONOURS	2 YEARS	A	2 YEARS	FOUNDATION PHASE

3.6.5 Brief Description of Sibongile Special School Participants

The teachers were assembled for this study by purposeful sampling. The profile of interviewees is presented in Figure 3.2

SIPHIWE	MALE	HBED	7 YEARS	A	6 YEARS	SENIOR PHASE
ZANELE	FEMALE	S.P.T.D.,ACE, ABET	21	A	3 YEARS	FOUNDATION PHASE
THULI	FEMALE	JPTD,FDE	19 YEARS	A	4 YEARS	FOUNDATION PHASE
THABISO	MALE	NDIP	4 YEARS	A	4 YEARS	INTERMEDIATE
MUSA	FEMALE	NPDE+ACE	21 YEARS	A	4 YEARS	FOUNDATION PHASE

The researcher used the above mentioned participants to generate data.

3.7 Data Generation process

3.7.1 Case study

In a case study more than one method of data generation can be employed in order to allow the researcher to compare and cross-check (Yin, 2009), since descriptive case studies pursue to develop a rich description of a phenomenon (Rule & John, 2011).The researcher in this study used semi-structured interviews and classroom observation to produce data to adequately allow an informative dialogue to collaboratively construct a meaningful reality (Cohen & Crabtree, 2008).

3.7.2 Interviews

An interview is the foremost method of data generation in qualitative research (DePoy &Gilson 2008) and is the principal source of in -depth information (Hesse-Biber & Leavy, 2006). In addition interviews are significant in executing a partnership between interviewee and respondent, and are a exhibition of a special rich and thick knowledge producing conversation (Hesse-Biber & Leavy, 2006). Kavel and Brinkman (2009) define interviews as a voice of common people which authorise them to air their views freely about their life situation in their own words.

Bertram and Christiansen (2014) describe the purpose of an interview as a tool for measuring a person's feeling and about what the person thinks including attitudes and beliefs. In this study the researcher sought to understand how much the classroom teachers know about the communication teaching strategies and how they facilitate them in the classroom with learners with autism. A semi-structured interview was adopted in this study.

3.7.3. Semi-Structured Interview

A semi-structured interview is referred to as a list of themes and questions (Welman, Kruger & Mitchell, 2010) that the researcher has to ask the participants during an interview which are related to the topic. Semi-structured interviews which are pre planned which gives the researcher the liberty to probe for further questions, have been used in this study (DiCicco-Bloom & Crabtree, 2006). In a semi-structured interview the researcher has a set of predetermined questions on an interview schedule (refer to attached appendix E), and these are referred to as an interview guide which necessitates a list of aspects that the interviewer should raise during the interview (Welman, et al., 2010).

All participants who were selected to participate in the study were relevant because their teaching method at the time of the study was learner centred compared to content or teacher centred method, generally not appropriate in a classroom for learners with ASD. The learner centred teaching method is directly related to the study in that it provided a detailed understanding of classroom communication strategies used by these teachers along with the use of resources.

The interviews were conducted in the school premises, in the classroom, after contact time. Each interview took about thirty to forty five minutes and was recorded for transcription and record keeping. This was done outside the daily events of the school activities in order not to disturb teachers during contact time. All participants were present during the day of each respective process, and all interviews were done in English, with all participants comfortable with the medium of language agreed upon. Interviews were conducted on a one to one basis with all participants using the set of questions from the interview guide (see attached Appendix no. 5). These questions were ideal for obtaining comprehensive and comparable data. The researcher had the ability to probe and ask for elaboration on the questions. The researcher used the guiding questions in order to gain insight of the classroom communication strategies with learners with autism.

Semi-structured interviews, in this study allowed the researcher to explore deeply into social and personal matters (DiCicco-Bloom & Crabtree, 2006) and be able to capture people's individual voices and stories and also to understand the socio-cultural context in which people live (Hennink, Hutter & Bailey, (2011). In addition it is useful because the researcher is able to get in-depth information by probing participants' responses further in order to generate more data which is related to the topic (Kumar, 2011). Semi-structured interviews give the researcher the advantage to ask and change questions during the process of the interview in a sense that the respondent can give more extensive

answers (Banister, Bunn, Burman et al., 2011) and welcome further input (DiCicco-Bloom &Crabtree, 2006).

The advantage of using a semi-structured interview, according to Bertram and Christiansen (2014) is that the researcher is at liberty to ask more questions to obtain more detailed information if the respondent has not initially given sufficient detail. However, the disadvantage is that it is a time consuming procedure, in planning and organising (Banister, et al., 2011).

3.7.4. Observation

The method of observation falls under the interpretive paradigm (Hennink, Hutter & Bailey, 2011) and it warrant researchers to systematically observe and record people's behaviour, actions and interactions (Kumar, 2011; Hennink, Hutter & Bailey, 2014). In this study the researcher chose to use observation because she wished to gather information about various aspects concerning the phenomenon e.g. the classroom practice and the interaction that took place verbally and non- verbally between the teacher and the learner in order to answer the research questions (Bertram & Christiansen, 2014).

In this study the researcher observed each class per day according to the turn of the participant to be interviewed. The observations were conducted in the morning from the first lesson and also after break. Visagie (2010, p.64) states that, "direct observation occurs when the observer is physically present and personally monitors what takes place". Every classroom consisted of a class teacher and the teacher aider because learners with autism require a high level of support (Mauzurik-Charles & Stefarnou, 2010).The classrooms were big enough to move around and perform educational activities. Almost in every class there was a cupboard full of resources for teaching and learning. On the walls there were hangings and charts of pictures and picture words. In every class there was a sink for running water so that it will be easy to support and control the learners. In choosing observation the researcher sought to obtain a thick description of the social setting, the description and interaction as well as activities of the people studied (Hennink, et al., 2014).

During the observation process the researcher was taking notes about the behaviour, perceptions, interaction and the activities that were taking place in the classroom. The advantage of choosing class observation is that it gives a comprehensive perspective on the problem under investigation, and the observer might notice things which people were unaware of (Babbie, 2013) thus aiming at in-depth

investigation of a problem in its natural setting (Cooper & Schindler 2006). However, the disadvantage is that the participants change their behaviour if they are aware they are being observed (Kumar, 2011). In addition, since the study was learner centred, it required an observation method in order for the researcher to see the classroom procedure and interaction between the teacher and learners with autism (Hennink, et al., 2014). Once all the data were generated, it was then analysed as discussed in the next section. In this study observation was used for triangulation purpose, the researcher wanted to relate what was said in the interviews and what was taking place in class.

3.8 Data Analysis

Data analysis is described as "making sense of data in terms of the participants' definitions of the situation, noting patterns, themes, categories and regularities"(Cohen, et al., 2011,p.537). The data was transcribed (Langdridge, 2004) which ensured accuracy. Data was first examined and, then broken down into their component parts in order to make meaning and was then analysed using thematic analysis. Thematic analysis is analysing of data by themes (Dawson, 2006).The second stage was coding. Coding is to analyse and make sense of data that have been collected (Welman et al. 2010) and enables the researcher to identify similar information (Cohen et al., 2011). In this study, patterns were carefully looked for, and codes were generated. The qualitative approach is incredibly diverse, complex and nuanced (Holloway & Todres, 2003) and thematic analysis should be seen as a foundational method for qualitative analysis.

3.8.1 Trustworthiness

Trustworthiness is a concept used by Guba and Lincoln (1994) for assessing interpretive research (Bertram & Christiansen, 2014).There are various important aspects to be considered by researchers for the study to be gauged as trustworthy. Trochim and Donnelly (2007) highlight that credibility; transferability; dependability and conformability are to be considered in ensuring the trustworthiness of the study.

3.8.2. Credibility

People reading the study should believe that the results are credible and they are the true reflection of participants' views (Trochim & Donnelly, 2007). After transcriptions were done the researcher returned the transcriptions to the participants to check if they are a true reflection of what they said and if there was something they wanted to add they were at liberty to do so (Greef, 2011). Since this is

a qualitative study, triangulation of different methods were used to collect data which were observation (learner's interaction in the classroom) and interviews (classroom teachers of learners with autism). The use of audio-recording during interviews (data collection) enhanced credibility because the study was interpretive and it must reflect the participant's reality (Greef, 2011).

3.8.3. Transferability

Transferability refers to the measurement to which the results obtained of qualitative research can be generalised or transferred to the other settings (Trochim & Donnelly, 2007). In this study the researcher was clear about the theoretical lens which framed the study and that there was enough evidence to back up the interpretation and not make unfounded claims (Bertram & Christiansen, 2014). The design of this study consisted of multiple cases (two special schools who enrolled learners with autism were selected to conduct the study), two data generation methods were used (observation and interviews); the researcher believed it was a strategic choice to enhance study generalisability, and triangulation of multiple sources of data (Greef, 2011).

3.8.4. Dependability

This refers to the researcher thoroughly investigating and checking the documents and auditing the context of the research which was conducted (Greef, 2011) and to be able to account for the variations in the study e.g. if the results of the study are not the same as the previous studies (Bertram & Christiansen, 2014).

3.8.5. Conformability

Confirmability is at the point where the results are unanimously accepted or corroborated by every stakeholder (Trochim & Donnelly, 2007). In this study being biased by the researcher was eliminated because all the stages of the research process were transparent and clearly detailed for the reader to check if they would make the same or similar conclusions (Bertram & Christiansen, 2014).

3.9. Ethical considerations

Ethical behaviour is important in research, therefore before data generation could take place various ethical considerations were considered. It is important that all research studies follow certain principles which include autonomy, non-maleficence and beneficence (Douglas & Wassenaar, 2007). This suggests that the researcher must respect the participants, and get consent of every person who is

participating in the study. All participants must participate voluntarily and are at liberty to withdraw at any time. The research should not harm any participants and they should be assured of confidentiality e.g., their names were protected when publishing the results.

In this study, before going to the field the researcher had to obtain consent from the gate keepers. The researcher submitted a detailed letter to the gate keeper which clearly stated the topic and the purpose of the study and why the particular school was chosen for the study. It also established what will be happening at the site during the research and how much time will be spent at the site and lastly what the school or individual at the site gained from the study. The two schools were chosen based on their enrolment of learners diagnosed with autism.

Creswell (2012, p. 211) argued that "in qualitative research, you often need to seek and obtain permission from individuals and sites because of the in-depth nature of extensive and multiple interviews with participants". Denzin and Lincoln (2005) and Welman (2010) highlight that, qualitative researchers need to take control of a code of ethics and conduct themselves with good behaviour. Ethical clearance from the Intuition Review Board was applied for and approved and the researcher before going to the field to collect data, waited for the letter of approval from the DoE. Participants were given consent forms to read and sign, and they were made aware of the purpose of the study, the nature of the study and in addition they were informed that they are not forced to be part of the study and that they are at liberty to withdraw if they feel so. The researcher used pseudonyms and codes to conceal participants' identities. The researcher was also discreet about the names of the schools hence the use of pseudonyms. All participants agreed that the findings of this study could be published.

3.10. Limitations of the study

The limitations identified in this study are that as much as the study on autism and communication is widely done however there are few articles on autism conducted in Africa, most of which are from international scholars. Learners with autism are scarce, and special schools that have autism units are few.

3.10. Conclusion

In this chapter a fully detailed account of the research design, methodology, data generation and analysis, measures of assessment, ethics and limitations of the study were discussed. In the next chapter analysis and findings will be discussed.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS OF FINDINGS

4.1. Introduction

The previous chapter outlined the researcher's justification for methodology adopted in the study. This chapter focuses on the data analysis and discussions of findings of the study which set out to explore two research questions. The data generated from semi-structured interviews and classroom observations are presented by means of themes and categories bearing in mind the key research questions. Further, in presenting the data the researcher used verbatim quotations to ensure that the voices of the participants remain intact in the presentation. Literature is also infused in the discussion of the findings.

4.2. Data Analysis and Discussion

The data from semi –structured interviews and questionnaires were grouped into themes and sub-themes. The findings are discussed using the research questions as a framework in this chapter. The main broad themes, sub-themes and categories are shown in 4.1 below.

THEMES	SUB-THEMES AND CATEGORIES
Theme One: Communication Strategies Used in Class with Learners with Autism are Diverse	**Communication strategies identified by teachers** • *Picture-based augmentative* • *Auditory learning strategies* • *Gestural prompts* **Enabling factors associated with communication strategies** • *Communication development* • *Targeting Academic Skills* • *Targeting health-related skills*
Theme Two: Ways of Facilitating Communication Strategies are Mutually Dependent	**Collaboration with school members** • *Teachers as collaborators* • *School Management Team (SMT) as collaborators* ***Collaboration with other departments*** • *School therapists as collaborators* • *Parents as collaborators* • *School artefacts*

Figure 4.1 Themes in relation to exploration of classroom communication strategies used with learners with autism at Umlazi special schools in this study

4. 2.1. THEME ONE: COMMUNICATION STRATEGIES USED IN CLASS WITH LEARNERS WITH AUTISM ARE DIVERSE.

In response to the first research question which explored communication strategies used in class with learners with autism, the findings in this study indicate that there is no single or fixed communication strategy used in class with learners with autism, especially at the Umlazi District. Evidence from the current study reveals that communication strategies used with learners with autism were consistently used as a tool to assist teachers to communicate with learners with autism from diverse angles. Two sub-themes emerged from the analysis of the data, namely: *communication strategies identified by teachers* and *enabling factors associated with communication strategies*. These sub-themes are now presented in the following sections.

4. 2.1.1 Communication strategies identified by teachers

The communication strategies used with learners with autism falls into three broad categories. Firstly, picture-based augmentative strategy was high up on the list of teachers' strategies.   Secondly, auditory learning strategies were also identified as one of the teaching strategies. Thirdly, gestural prompts were also common on the list of communication strategies used with learners with autism in the current study.

Picture-based augmentative approach

Teachers responded with immediacy and identified pictures as the strategy they used when communicating with learners with autism in the classroom – most notably from the observation were picture book, charts and picture cards. Story books with pictures, picture cards and charts with pictures were dominant in all classes that the researcher observed accompanied by drawings, especially drawings produced by these learners.

The findings are coherent with the study concept of the scaffolding and ZPD concept because the teacher takes the learner from unknown to the known, guiding and supporting the performance of the task throughout the lesson. Teachers indicated that they use picture related methods and gestures to facilitate communication strategies which promotes active interaction between the learner and the teacher whilst the focus and shift is more on the learner, because the learner has to master the task. Vygotsky, cognitive learning theory is not passive: it is an active process. The teacher at all times is always needed to instruct, demonstrate, gesture, signal and explain (Crain, 1977).As most of the teachers highlighted that they use gestural prompts which includes touches and demonstrations which

is coherent with the concept of the theory which is being learner centred and based on active interaction (Donald et al., 2010).

On the basis of the recent findings in this study, it is reasonable to note that, there is abundant research literature that demonstrates picture-based augmentative approach which is widely used to assist communication with learners with autism (Arthur, Kelly, Ganz & Flores 2008; Bondy & Frost, 2011, Flippin et al., 2010; Ganz & Flores 2010; MacKenzie, 2008; Mirenda, 2009; Singatoos et al., (2008); Willis, 2009). Two studies have demonstrated that learners with autism are often described as visual learners (Merinda, 2009; Willis 2009). Therefore, the support of the picture-based augmentative approach comes from studies showing the superior benefits of using pictures with these learners. Generally, pictures are the primary source of classroom strategy to facilitate communication because learners like pictures (colourful big pictures), and it is the easiest way to communicate with learners with autism, according to Henry (2010). The findings in the current study could be viewed as being consistent with these studies. Teachers in the Umlazi District schools attempted to communicate with learners with autism using various picture-related methods, such as PECS, AAC and gestures.

Auditory Learning Strategy

A second strategy emerging from the identified strategies used by the teachers was the auditory methods as being helpful in communicating with learners with autism in class and it is significant to note that all teachers participating in this study referred to them. Others depict radio, T.V, IPod as examples of auditory devices. T.V and Radio were prevalent among the auditory learning strategies identified by the teachers in this study.

The findings in this category resemble those of Hess, Omorriet, Heflin and Ivey, (2008) who revealed that the use of an auditory strategy is effective in the use of teaching learners with autism in a study that explored teachers' experiences of teaching leaners with autism in Georgia in United States of America. Similarly, according to the following scholars Dettner, Simpson, Myles et al. (2000) in a study of two elementary-age boys with autism spectrum disorder, the findings revealed evidence that teachers use auditory tasks or methods to develop communication with learners with autism. Accordingly, the results of the current study indicate similar findings to support the notion of the auditory learning strategy.

Gestural Prompts

Gestural prompts may be defined as instructions, gestures, demonstrations and touches that we arrange or do to increase the likelihood that learners will make correct responses Hayes, (2014). In addition Isaias, Ifenthaler, Spector and Sampson (2015) define prompts as auxiliary extra artificial stimuli that will cue the learner to display interest at that relevant time. These may include signs, demonstrations, and pointing. The majority of the participants in this study depicted the use of sets of gestures as communication strategies used with learners with autism. These gestures noted during the observation of the three teachers included a variety of physical gestures, such as, clapping hands hand signs, sign language, and pointing. Mirenda (2009) emphasised that using body language or gestures to convey meaning is another form or strategy used to communicate with learners with autism. For instance, her findings indicate that teachers or learners would 'shake their heads' to show something they dislike or not agree with. Similarly, a study in United States by (Ganz, Earles-Vollrath, Manson et al., 2011) revealed large use of gestures actively involved in teaching learners with autism. The gestures may include direct involvement of a person or object to communicate. For instance, Frost and Bondy (2011) found that the students would pull a teacher towards the door as an indication that the students wants to go out of the class. The literature shows that manual signs are used to process information to learners who have communication impairment (Ashcroft et al., 2010). For instance, body gestures add meaning to the processed message and should be clear for instance, facial expressions, and eye contact (Ashcroft et al., 2010).

Data from interviews also reveals that teachers make use of multiple strategies in a non-linear approach depending as they see fit to meet the diverse needs of the learners. The following were some of the teachers' remarks:

Zanele:

> "*I use pictures and gestures most of the time because that is what is common and available, sometimes we do open the radio for them to listen... *" (Zanele)

Akhona:

> "*Besides the pictures we also use radio cause radio forms part of communication…*".

Musa:

> "*I use pictures gestures and gestures and signs*".

Akhona:

"... we're using sign language and the we're using pictures to communicate with the non-verbal learners...".

Zodwa:

"Strategies like talking explaining showing them pictures work more than anything else   ".

Tholakele:

"We use TV we have a TV in the class for them to watch and see what happening on TV and

tell me what's happening even if they not going say it verbally to point what they saw on TV".

Zodwa:

"I use pictures and BIGMack, when a child speaks, the computerised voice speaks for the child ...".

However, closer examination on the use of pictures, auditory methods or gestural prompts, reveals individual variability and vary according to the school context. At the Umlazi District, the context of this study, teachers demonstrated a preference of picture exchange communication system and gestures.

Communication with learners with autism requires multiple strategies that teachers have to use to address the diverse needs of these learners. The multimodal strategies involved various dimensions of communication in the classroom. This is in line with perspectives that there are various ways of learning and people learn differently and are supported by many researchers, including Fleming (2011). In the context of learners with autism, similar contentions also apply. Research shows that learners with autism are capable and bright students who can learn and succeed like any other student (Deris, 2012; Snell, Brandy, McLeanl et al., 2010). On the basis of the findings in the first theme of this study, it can be argued that learners with autism are unique and diverse. Similar findings were also observed in previous research (Ashcroft et al., 2010; Cater, Prater, Jacson & Marchant, 2009; Wall, 2010) with which I concur. Therefore, the findings contrast the contention that describes these learners as visual learners only (Merinda, 2009; Willis, 2009; Friend, 2008; Rao & Gaige, 2006; MacKenzie, 2008). Significantly, participants in this study were adamant that communication

strategies employed in their classrooms were used purposefully – particularly as enabling communication with these learners, as discussed in the next section.

4.2.1.2 Enabling factors associated with communication strategies

The identified strategies by the participants in this study were associated with meaningful teaching and were consistently used to enable learners to communicate about their learning, social conditions and difficulties that they may have been encountering. Earlier, especially in Chapter Two, it was demonstrated that learners with autism have the capacity to learn and act in different ways (Sicile-Kira, 2014; Sulaiman & Baki, 2010), and the teachers have a key role to play to create enabling spaces for learning, including for learners with autism. On the basis of this, three main categories emerged from the analysis and how teachers' responses evidence their importance when communicating with learners with autism in the classroom. These categories are discussed in the following section.

The themes that emerged from the data indicate that aided and non- aided approaches are used to convey multiple messages in the classroom –based learning activities; strategies for classroom management; strategies to teach social relationship and skills; personal hygiene and personal activities ; instructional communication and facilitating using technology.

Communication development

The findings of this study reveal that teachers employed a variety of communication strategies as shown in the previous section in order to develop and improve learners' communication. The teachers mentioned that learners with autism have the capacity to communicate in a unique way, therefore, as teachers; their role is to develop that communication. In this sense the elicitation from the interviews show the value of using strategies to enable learners' expression. Some of the participants' remarks were as follow:

Zodwa

> *"I use signs and pictures when I am teaching most of the time, because they cannot communicate and talk, they are used to communicating with pictures."*

Siphiwe

> *"We use charts, coloured pictures and we put the name of the thing that we want them   to name or say, then we show them the picture, and thereafter we remove the picture   and   just show the name, we use picture and verbal"*

Some participants mentioned that they use certain strategies when addressing specific group of learners with autism, such as, non-verbal learners, as is the case of Akhona in the following remark:

Akhona

> *"... we're using sign language and the we're using pictures to communicate with the non-verbal learners, it helps because I get what the learner is trying to say and what   the   learner is trying to express ..."*

Another participant said

> *"... if I want them to be familiar with a certain gesture repetition is key because   learners with autism like repitition and to be shown something over and over again, repitition is key in terms of developing their communication strengths"*

These responses and others that were given by the participants showed a heightened awareness that learners with autism have the ability to communicate. The use of various strategies employed by the teachers emerged as significant tools that enable and enhance effective communication of these learners. Additionally, teachers use various communication strategies not only for learners' communication development, but also for academic skills and performance.

Targeting Academic Skills

Earlier, it has been demonstrated that all learners, including those with autism condition, have rights to quality education, care and support in order to thrive in life (DBE, 2010; DoE, 2001). All teachers participating in this study have mentioned that they use a variety of communication strategies in order to enable students to acquire academic skills and perform scholastic tasks. They spoke eloquently that their responsibility is to use strategies that enable capacity to learn different skills and performances. Some participants emphasised the need for giving learners instructions in the classroom, as follows:

Zanele

> *"Most of the time we use picture boards, we use a lot of pictures to give instructions and some we give them puzzles ..."* (Zanele)

Mbali

> *"The resources I am using are puzzles, beads and pictures to give instructions".*

Siphiwe

> *"I use verbal communication because they all speak they follow instruction they listen and receptive language is very good we use verbal communicate sometimes we use pictures but with my learners what suits the most is verbal communication".*

These data certainly demonstrate the value of clear instruction to enable learners' participation in class. According to the participants in this study giving instruction could be considered a valuable tool because learners are given a chance to "follow" or "listen" to the teachers' instructions. In turn, this encouraged an understanding of drawing learners' attention to learning through the use of various communication strategies, Simpson, Myles and Ganz (2008) assert that the use of visual methods form part of instructional approaches and classroom management and assist learners to focus and maintain attention. In addition Ganz; Earles-Volrath and Cook (2011) posit that visual based instructions, such as pictures to demonstrate visual images are preferred by learners to follow instructions.

The findings of this study also indicate that the majority of the participants felt that they needed to use strategies that will enhance learners' understanding on particular concepts or tasks. Learners' understanding would also mean providing explanation and clarification using various strategies as shown in the following quotations:

Mbali

> *"Sometimes I can see that this learner can't understand so I use pictures so that you able to understand much better"*

Musa

> *"Using pictures and picture boards if you have a boards let's say you take ''A'' they take ''an''*

Akhona

> *"I first demonstrate to them using visual aids like objects, puzzles, building blocks and   give those instructions breaking down instructions step by step so that they could be   able   to understand what is expected of them".*

In keeping with the issue of enhancing learners understanding, some participants' responses featured discernible strategies to diverse learners with the autism condition. These include: *echolalia learners; selective mute learners and verbal learners.*

Zanele

> *…"with echolalia learners … I proceed to give instructions using pictures and body language until they understand what needs to be done, with the selective mute learners I give them instructions using pictures and gestures and I repeat until they understand what is being said to them"*

Mbali

> *With echolalia I usually tell what I want them to do or I point to whatever I want them to do like if I want them to fetch something I use signs and if they repeat what I said then I say yes that's what I mean until they do it with echolalia"*

Akhona

> *"I terms with a learner who is selective mute I give the learner instructions   and a chance to try and listen to what I am saying and a chance to speak I don't rush if the learner is trying to recall what I was saying to him or to her."*

A few of the participants indicated that they have verbal learners in their classrooms.

Siphiwe

> *"… verbal communication because they all speak they follow instruction they listen and language is very good we use verbal communicate sometimes we use pictures but with my learners what suits the most is verbal communication".*

Zodwa

> *"Because most of my learners understand verbal communication so strategies like talking, explaining, and showing them pictures work more than anything else."*

As discussed in the preceding chapters, learners with autism are diverse and their needs are diverse (Sulaiman & Baki , 2010; Megat & Rahman , 2010). Using different communication strategies is key in addressing diverse needs of these learners, that are important to them and that can best help them to learn. Research indicated that communication problems to learners with autism are not the same since they are unique and their impairments are presented in varying degrees from each individual, some are non-verbal, selective mute, and others are echolalia, (McKenzie, 2008; Ashcroft et al., 2010; Willis 2009; Wall, 2010). For instance, the literature shows that learners with autism can be taught communication using sign language as an unaided functional communication approach (Rao & Gagie, 2006). Pictures cement the meaning of the word to the mind of the learner (Mirenda, 2009) and learners with autism respond better to real pictures than to line drawings (Willis, 2009). Whereas, Ashcroft et al., (2010) argued that body gestures add meaning to the processed message. Thus, the current study revealed that teachers employed various strategies to give instructions, to explain, to clarify the subject matter and learners' tasks, and more importantly, enabling learners' active participation by some participants in their excerpts. In essence this argument is informed by the notion that teachers should create safe spaces to learn and address all barriers to learning and to children's welfare (DoE, White paper 6, 2001; SIAS Policy, 2014).

Targeting health-related skills

Learners' support in the classroom, including learners with autism, involves the provision of holistic support by teachers. Another emerging theme in the findings of the current study is to show how communication strategies were used to support learners' health.

Akhona

> *"Pictures suits all learners , for instance if I'm teaching to wash hands for those who are able to talk I will explain verbally but from those who are unable to wash, I show them pictures on how hands are being washed and all that in the form of the picture."*

Akhona

> *"Pictures suites all learners if I'm teaching them washing of hands, I can show the pictures how the hands are being washed …".*

Significantly, the findings of the current study reveal that learners with autism were able to communicate with their teachers and position themselves as able to in taking care of their immediate needs. The following quotes were highlighted by the participants in both schools showing how classroom-based communication is key to communicate learners' immediate needs.

Thuli

> *"They bring the object straight to me, like when they want to drink water, they bring the   cup and I see that they want to drink water or else when they want food, they take their bags straight to me and when I open their bags on will take his or her lunch box and go to the table and eat that's how they show me how they communicate."*

Mbali

> *"… If they want water they take a picture of water they show it to me."*

Zanele

> *"Most of learners in my class   use sign language or pictures if they request to drink water or to sleep, even if they are sick, they use sign to communicate with me."*

Some of the participants spoke eloquently about how their learners were able to use different communication strategies when they wanted to relieve themselves. The following were some of the remarks by some of the participants in this study.

Zanele

> *"Amahle has no speech but if she wants to go to the toilet she will point to the picture   and say toilet, then I know Amahle wants to go to the toilet".*

Zanele

> *"Mpendulo will hold a person, and then we will see that he wants to go to the toilet".*

Zodwa

> *"If they want to go to the toilet, they show, they make assign of a toilet".*

Thuli

> *"They use signs, like when they want to go to the toilet, you can see one taking his pants of mostly the boys they do that even one girl can do that in class she showing by action then you take them to the toilet, ...".*

Earlier, it was demonstrated that the current study was informed by the researcher's understanding of the challenges learners with autism face in their daily lives and in a school context. However, the findings of the study revealed that learners with autism do have their own knowledge and skills and have the capacity to act, and are, therefore, capable of initiating communication and addressing their needs. As shown in the participants' responses, learners with autism also use a variety of communication strategies to communicate with their teachers, for example, to request, to show, to give directions to their teachers and address their needs. This is confirmed by the literature when it showed that requests (or mands) are regarded as the most vital form of functional communication for young children with autism (Tincan , Bondy & Crozeir, 2011) - requests enable the child to meet his/her basic needs, such as asking for preferred item or activities (Barton & Harn, 2012).

4.2. THEME TWO: WAYS OF FACILITATING COMMUNICATION STRATEGIES ARE MUTUALLY DEPENDENT

This theme focused on the ways in which communication strategies with learners with autism are facilitated in a resource-constrained Umlazi school, in response to the second key research question. Emerging out of the findings is the recognition that communication strategies used with learners with autism are mutually dependent *on* the socio-cultural context of the school. The findings suggest that teachers' interaction and collaboration with various resources (human and non-human) have a large influence on the ways of facilitating effective communication with learners with autism. Three major categories were considered in this theme; those relating to collaboration with members within the school; those relating to members outside the school and those relating to artefacts of the school. Each of these will be considered in turn.

4.2.1.2 Collaboration with school members

Teachers as collaborators

The findings indicate that collaborating with other teachers in the school and positioning teachers as agents in facilitating communication strategies is key to identifying issues that are important and that can best communicate strategies aimed at learners with autism. Hence, the participants recalled working with support teachers widely known as 'teacher aiders' as shown in the following quotations:

Thabiso

> *"It also helps having an assistant, cause when dealing with children with autism we try to give them all the attention, which is rather impossible you can never give them all you attention at the same time"* .

Zanele

> *"Yes we do, here at school we work as team, like here in the autism unit"*

Siphiwe

> *"Working with learners with autism we started by making up the autism support team in our school, we also have teacher aiders we support each other in whatever we are doing"*

In essence, the above quotations inform us that teachers teaching learners with autism do not work in isolation, rather, recognise that fellow teachers do have the knowledge and skills which might contribute to effective communication strategies with learners with autism. Teacher 'aiders' are, therefore, capable of being protagonists in understanding the challenges that face learners with autism and might assist the teachers in relation to the improved communications strategies that are relevant to these learners.

Tholakele

> *"I have lots of support in the class in terms of teacher aid so if I'm doing something I can concentrate on another child the support is 100%"*

Zodwa

> *"... my teacher aider, is more familiar with learners with autism and understand them, even if Im absent she inforce the content that I've been teaching the kids all along, so that's the support structure I have"*

As discussed in the preceding section, the findings of this study revealed that working with learners with autism do not succumb to their own inabilities, but also engage and mobilise fellow teachers within the school who provide alternative stragegies. As the researcher observed in the classroom of both schools, teachers were not working alone but in collaboration with other teachers and school based therapists. IEP was mostly practised in the classroom and the teachers were given programmes by the therapists for daily activities to be conducted in order to improve speech and enhance

communication with learners. By involving teachers as fellow members as well as their knowledge and skills and their thinking, such approaches render these teachers as 'insiders' (belonging to autism community) that bring other important and different experiences to the fore. Sapon-Shevin (2010) asserts that teachers working together are able to create shared expectations, listen to each other and appreciate each other's knowledge and ask questions.

School Management Team (SMT) as collaborators

A second category emerging from the findings was the SMT members portrayed as being involved with classroom communication strategies used with learners with autism. Most participants spoke about the good working relationship they have with the school management team (SMT). The SMT is responsible for drawing up the curriculum and programme that tailors the needs of learners with autism for effective teaching and learning to take place. The findings show that the SMT is deeply involved in the learning process of learners with autism

Siphiwe

> *"We have a brief meeting discussing the difficulties and problems that we encounter in our team, and our learners. After discussion they give us advice for the matters that we discussed. Our co-ordinator alongside with the SMT is supportive, so there is a support team in place.*

Zanele

> *"… in the autism unit, we work as a team we also involve the management and deputies we work together with them so it makes us to know what we're doing they help us a lot"*

The above quotations show that teachers report and solve classroom problems together with the SMT during discussion in meetings. This is consistent with the literature in this study. Freind and Cook (2009) assert that collaboration is essential in special schools and it includes the principal, management team, therapist, parents, teachers and teacher aiders. Furthermore Sandset et al. (2000) posit that the collaborative community is responsible for decision making and problem solving, shared responsibility for goal setting, a supportive environment, shared resources, training and valuing every member of a group as an equal partner.

A leadership team co-ordinates the school efforts as its members gather information, guide the vision making process and communicates the schools' progress to all members of the school community (Sapon-Shevin 2010). Within the SMT, participants emphasised the role played by heads of departments as discussed in the following section.

Heads of Department as collaborators

Within the SMT committee featured the discernible role of the head of department (HoD) of the autism unit. The HoDs activities took three main forms. The most prevalent activity was one of the curriculum-related matters, where the teachers can discuss problems they face in teaching learners with autism. Indeed, the notion of discussing the learners' progress and attending autism workshops with the HoDs were identified by the participants and depicted as ways in which the teachers draw on in order to improve classroom communication strategies with learners with autism. The following excerpts from the participants indicate the relationship between teachers and their HoD as significant facilitating effective communication strategies with learners with autism.

Zanele

> " We work as a team we also involve the management H.O.D's with them so it makes us to know what we're doing they help us a lot"

Thuli

> "We work together as a team with our H.O.D's sometime we sit together and discuss about the learners progress"

Musa

> "We work together with my HOD and we went for a lot workshops doing autistic we help each other"

Zodwa

> "Yes I do I have the support of my HOD in our unit"

Consistent with the findings of Engelbrecht (2013) the findings in this study show that the active role of HoDs is providing resources to the teachers, allowing teachers to attend in-service training and assisting teachers to be able to improve their communication strategies used with learners in their classroom. The findings also resemble those of Stewart (2012) who mentions that HODs are responsible for monitoring progress against implementation plans to invest heavily on capacity building approaches and significant improvements. These findings suggest that effective teaching of learners with autism could trigger joint-attention and mutual dependence, where teachers use ideas and support from the SMT to improve how they communicate with the learners with autism in their classroom. Such mutual dependence between teachers and SMTs could facilitate 'school culture'

where the participants and SMTs together discuss challenges that they face when teaching the learners with autism but also one where teachers and SMTs identify solution that are relevant to the needs of their schools and their learners. Sapon-Sherin (2010) asserts that the leadership team co-ordinates the school's efforts as its members gather information, guide the vision making process and communicate the school progress to all member of the community. The findings resemble those of (MacDonald and Speece (2001) who suggested SMTs' core duty is to provide appropriate resources and induct new teachers in autism for effective teaching and learning to take place. In sharp contrast Kilgore, Griffin, Winn et al., (2000) assert that autism classroom teachers face challenges in that they experience insufficient resources, inadequate administrative support and lack of opportunities to collaborate with administration personnel.

The findings contribute to the veracity and coherence of the framework of the study, that is, collaboration forms a tool of interaction when the various stakeholders and teachers contribute to the teaching and offering support to the learner with autism (Sableski, 2009). The theory emphasises active interaction in the classroom in a form of teaching, intervention, supervision, support, instruction and demonstrator. The collaboration of various stakeholders (which were previously listed) was for the development and enhancement of the learner with autism, the learner plays a central role and all the focus is on the learners (Clapper, 2015).

While not the focus of the present study, it is surprising that not even one participant mentioned the role of the principal within the SMT's roles, among others as the principal is the head of the SMT and is involved with the day-to-day activities of the school. Absence of principals' support for these may impact negatively on the teachers and their ability to improve their communication strategies with learners with autism in their classroom, which warrants further investigation.

4.2.1.3 Collaboration with other departments

Emerging out of the present study is recognition that it is important to have the participation of other professionals within the school and from such collaborations, to develop strategies for improving communications strategies used with learners in class.

School therapists as collaborators

Significantly, the participants in the present study portrayed the school-based therapist as an asset or resource from which teachers draw when working with learners with autism in their classrooms. The school-based therapist, with their special skills under the phenomenon under study, are best positioned as experts and understand the issues that learners with autism face, and are also best placed to assist

teachers in the development of appropriate ways in which they work with the learners with autism. Some participants mentioned that they consult with the therapist as shown in the following excerpts:

Tholakele

> *"I consult all the time if something I'm not sure about I consult the school occupational therapist"*

Musa

> *"We work together with therapist, if I don't understand this child I call my therapist to come and explain today this learner is behaving like this maybe he come and sit with her and with learner we assess them so we get now a clue what happen with this learner"*

In relation to teaching the learners with autism, it is the teachers' responsibilities that they mobilise and harness the resource that may contribute to the well-being of the children. Consulting with a school-based therapist, as well as inviting them in the classrooms, is likely to yield more improved communications strategies used with learners with autism in the classroom. In a similar manner, some participants emphasised the involvement of school-based therapists as follows:

Zanele

> *"Here at school we involve therapist, we work together with them so it makes us to know what we're doing they help us a lot"*

Thuli

> *"We work together with therapist sometime we sit together a teacher and a therapist and parent and discuss about the learners progress"*

These findings could be viewed as being consistent with those of Hess, Morriet, Hefflin et al. (2008) who demonstrate the value of involving school therapists when dealing with issues of learners of autism. While this could benefit the learners the teachers also benefit from working with 'experts'. The teachers in the present study were able to invite the teachers in their classrooms, work together with a therapist and learners, as well as parents – supporting Case-Smith and Arbesman's (2008) assertion that school therapists take provision of the daily living of a learner with autism and implementation of educational intervention programmes. As a researcher I observed school-based therapists e.g. speech and occupational therapists in both schools taking turns alternating with teachers to teach their developmental programmes and also providing support in communication programmes

in class therefore teaching learners with autism cannot be the sole responsibility of the teacher alone, but rather the opportunity to increase participation amongst learners, teachers and other departments in the well-being of learners with autism. Given the complex nature of autism, teachers' collaborations with school members, involving specialists or experts, such as, therapists is perhaps a sensible collaboration to improve communication strategies used with learners with autism. In this sense, the present findings conveyed strongly the need for school-based therapists, especially in marginalised communities, who are knowledgeable and willing to work with teachers and parents with regard to improving the communications strategies when working with learners with autism. A further category emerging from the school's collaborations in relation to facilitating communication strategies with learners with autism was the involvement of parents, which I discuss in the next section.

Parents as collaborators

There is a general adage that learning is a three legged pot, whereby parents, learners and teachers are expected to take an active role in the learning process. In the context of the present study, participants from both schools indicate that parents from time to time are invited to come and be part of the intervention of their children's educational programme, since some programmes require to be carried over and be monitored at home. The values of involving the parents were expressed by the following participants as follows:

Zanele

> *"we work with parents most of the time"*

Zodwa

> *"we call parents to explain the behaviour of the learn*ers"

The findings certainly demonstrate the significance of involving parents to improve communication strategies with learners with autism. There is abundant literature demonstrating that children with autism have increased parents' involvement and participation in learning (Lemmer & van Wyk, 2009; Leach & Duffy, 2009; Kaiser & Hancock, 2000; Fish, 2006). Two of the studies have demonstrated that parents became better consumers of intervention methods for learners with autism for deciding the suitability of various intervention options. (Wall; Burns & Llewllyn 2015) raise prospects that parents may also attend school programmes to improve their communications strategies used with learners with autism. Furthermore, recent findings by Gallagher et al. (2004) have shown the impact of parental involvement on students in special education programmes. The findings of the present

study show that when parents are involved in their learners' education, particularly, autistic learners, they will be able to complement or improve communication strategies with their children. Moreover, the findings in the present study show that parents have an opportunity to discuss their children's issues with experts whom they rarely meet or see. Furthermore the recent findings e.g. Panerai , Ferrante and Zingale (2002) assert that the (TEACH) programme implemented in residential settings (home) and monitored by parents and assessed twice a week using psycho educational profile, confirmed the positive outcomes in natural settings, and reveal its inclusive value. The results of the study reveal a higher effectiveness of the (TEACH) programme. The involvement of parents and support showed a great co-ordination between home and regular school based programmes.

These findings are in contrast with existing studies which reported lack of parental involvement in their children's learning, especially, parents of learners with autism. Brueningsen and Watchorn (2011) argued that the lack of parental involvement results in lack of learning in the classroom, and the implementation of communication intervention programmes. In addition Kim, Lewis and Bey (2011) assert that many parents feel ill equipped to address the educational needs of their children since they are unable to understand special education jargon and terminology. On the basis of the findings of the present study, it could be argued that parents were involved because the school is specifically for learners with special needs and was known to the parents; however the broader involvement of parents in other schools in relation to learners with autism is still questionable.

School artefacts

School artefacts are already part of teaching and learning. Teachers need aids to carry out effective teaching and learners need aids for effective learning. School artefacts were mostly depicted by the participants in the present study as a means from which a teacher draws in order to facilitate communications strategies with learners with autism.

Figure 4.2 gives some specific examples of how school artefacts were nurtured within an autism classroom. It has been proposed that the school artefacts are made up of three components – high tech, less high-tech and indigenous artefacts as shown in Figure 4.2 below:
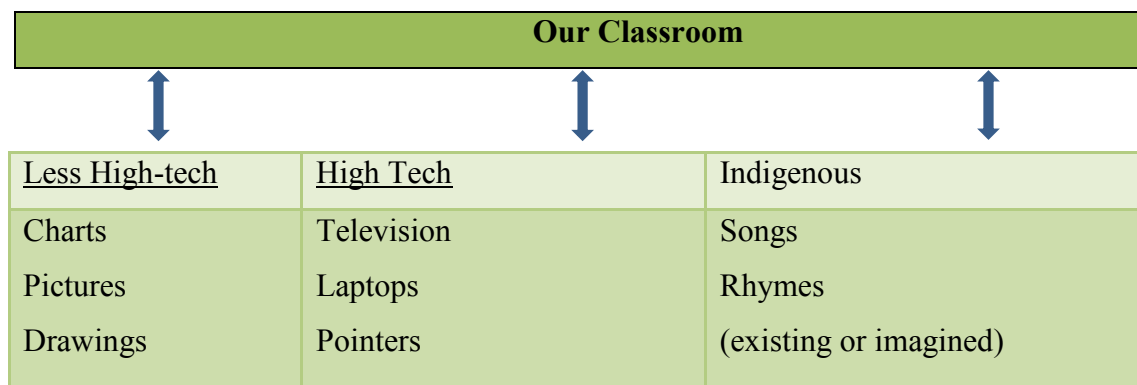
Our Classroom		
<u>Less High-tech</u>	<u>High Tech</u>	Indigenous
Charts	Television	Songs
Pictures	Laptops	Rhymes
Drawings	Pointers	(existing or imagined)

Figure 4.2 gives some specific examples of how school artefacts were nurtured within an Umlazi classroom

As indicated in Figure 4.2, participants draw from multi-media resources within their school which they regard as important in facilitating effective communication with learners with autism in their classrooms. Most participants indicated the use of what the researchers has classified as 'high tech' as shown in the following excerpts:

Zanele

> *"sometimes we radio for them to listen"*

Zodwa

> *"we use Big Mack, Cellphones or Ipods"*

Tholakele

> *"We use T.V. we have T.V. in the class for them to watch and tell what is happening"*

Laptop; Apple; IPad and Android, are widely available as portable hardware which run specialised AAC "apps" which exist for AAC uses with ASD (Shane et al ., 2012).

Touch IPad with Prologue 2GO software (Sennott & Bowker, 2009), allows an Ipad or Ipod to be used as an SGD and can be used with ASD learners (Kagohara, Achmandi, Van der Meer et al., 2012). Other participants were more likely to depict what the researcher has classified as 'less high-tech'. For example, the following participants said:

Mbali

> *"I am using puzzle beads, pictures as resources"*

Zanele

"We use picture boards and charts"

The use of AAC in a form of pictures, photos and charts is mainly used in a form of low technology parts (Lubas, Mitchell, & De Leo, 2014).

Tools that are used to facilitate communication in the classroom with learners with autism which are low-tech special purpose include non-electronic communication boards and graphs which are widely used to enhance communication to ASD learners (Wendt, 2009)

A final category of what the researcher has classified as 'indigenous' artefacts were indicated by a few teachers. These included the use of a variety of teachers' own songs, existing or imagined.

Zanele

"like Avela when we do more rhymes"

Tholakele

"we also use singing songs and rhymes to learn"

The pattern and sounds that go with nursery rhymes can be especially fun and interesting for learners with autism (Wiggins; Piazza & Robbins, 2010).

Music therapy has been extensively used in the past for four decades as treatment and teaching children with disabilities (Nordoff & Robbins, 2007). In addition Kim, Wingram and Gold, (2008) assert that there is a link between music, education and the learning process. Music positively impacts on communication skills (ibid). In the study of Vaiouli and Schertz (2012) the findings indicate that using music and rhymes has a significant improvement in spontaneous eye contact and alternating eye contact. According to Walworth (2009) music serves as the stage of developing communication and concentration to reflect the child's emerging skills, while the teacher or therapist offers a more sophisticated musical context to move the child gradually beyond her present level of capabilities.

The findings in this second theme suggest that a range of different resources (both human and non-human) were significant in order to facilitate effective communication with the learners with autism. These findings indicate that teachers in this study were able to identify resources within and beyond the school in terms of their contribution to facilitate communication with the learners. Usually, schools in townships are viewed as lacking resources; however, the findings in this study contradict

that view. Schools have many untapped resources that teachers can draw from towards communicating with learners with autism, as is the case in this study. The majority of teachers found the above mentioned artefacts to be more stimulating and more likely to increase and improve communication with these learners in the classroom.

This suggests that improving communication with learners with autism in the classroom enables teachers to adopt a variety of adaptive and maladaptive strategies to facilitate effective communication. The findings in theme one of the current study show significant teaching strategies that teachers in the Umlazi District use and their significant holistic influence on learners' communication in the classroom context. The findings revealed the most dominant communication teaching strategies which are used in the classroom, which is: visually based objects, augmentative gestures and auditory learning styles. The findings in the first theme, therefore, had significant influence on the second theme, thus, the need of the teachers to interact and work with other resources within and beyond the school has then became most important. Thus, the findings in the second theme demonstrate that teaching with learners with autism is not the responsibility of the teachers alone, but a collaborative effort within the school (Tucker, 2000). This involves interaction with people (e.g. other teachers, SMTs, therapists) and artefacts (e.g. computers, charts, songs and rhymes). These activities suggest teachers play a significant role in organising and making sure that the needs of learners with autism are addressed. Interestingly, tapping into teachers' creativity, such as using songs reduces the wide spread view that school lack resources, especially in townships, as is the case in this study.

The findings of the current study concur with the view expressed by the Inclusive Education Policy Framework that learner support includes activities and resources which assist the learners to thrive even in challenging conditions (DoE, 2001). Teachers must be resourceful agents in organising a range of resources, creating and mobilising resources to meet the needs of all learners.

Zanele

"we use pictures, puzzles, and picture boards as resources"

Mbali

"We use puzzle beads, pictures, charts as part of our resources"

In addition, the findings of this study concur with Dettermer Simpson, Myles and Grantz, (2006) who assert that visual support is widely used in schools by teachers to facilitate communication with

learners with autism but few studies on using visual strategies by teachers have been published. In the study by Ganz, Simpson and Corbin-Newsome (2007) where three preschool aged children were studied, it was asserted that learners with autism mastered the use of PECS and has become an area of interest to teachers and researchers (Ganz et al., 2008; Sulzer-Azaroff et al., 2009).

Since the findings provide strong evidence that teaching learners with autism is not the sole responsibility of teachers alone, it can be argued that teachers in the current study were aware of their roles and responsibilities, directly or indirectly. This could be related to the fact that schools known as 'special schools' are receiving support from the Department of Basic Education. There is an escalating need for teachers to work with other teachers, other departments, parents and become creative in order to address the needs of learners with autism, (SIAS Policy, 2014). The findings of the current study indicate that there is hope for such collaborations which need to prevail in all the school. Teaching learners with autism cannot take place in a vacuum and teachers cannot work without understanding the disability condition of learners. Vygotsky's theory contributes in building a classroom atmosphere where interaction is prominent helps to develop effective teaching and learning. Good collaboration between the teacher and the learner produces active communication which is the result of effective social interaction (Powell & Kalina 2009). This is supported by Vygotsky's contention that the learner requires an involved teacher who is an active participant and guide for a learner (Powel & Kalina, 2009). Thus, the teacher organises teaching aids, uses various communication strategies and human and non-human resources to promote effective teaching and learning in the classroom of learner with autism.

The findings of this study have illustrated how using cognitive constructivism theory enabled the teachers to express their own views about communication strategies that they used with learners with autism within the classroom environment. The concept 'autism' is complex and fluid and could be situated within the learner. Taking a wide range of research into consideration, the findings revealed that teachers used many communication strategies to meet the diverse needs of the learners with autism. The most significant identification of these strategies were pictures, gestures and auditory devices in efforts to communicate with selective mute, echolia, non-verbal or verbal learners.

Furthermore, findings have illustrated how the theory provided an understanding that teaching learners with autism is not the sole responsibility of the teachers. Thus, through the lens of cognitive constructivism underpinned by the main concepts of scaffolding and ZPD framework, it could be argued that teachers of the participating school took multiple ways in which they shaped the classroom experiences with learners with autism in relation to improving their communication. In this

case, teachers used their own skills and knowledge, including their own imagination (use own songs) to initiate communication with learners with autism. But they also appreciated and acknowledged the efforts made by their colleagues within (colleagues, SMT) and beyond the school (parents, therapists), and these need to be strengthened as alternative strategies for effective communication with learners with autism. By building on already existing resources (human and non-human) in the context of the school, classrooms could be reshaped and with necessary teaching strategies could be reinforced for meeting a range of needs of learners with autism.

4.3 CONCLUSION

The findings relate to the research question on teachers' communication strategies with learners with autism. Firstly, identification of communication strategies that teachers identified as significant to them was discussed. These strategies were diverse and were employed to meet diverse needs of learners with autism is these schools, as discussed in the second theme. The third and last theme that emerged from the findings discussed the ways in which the teachers collaborate with other resources and improve communication and the well-being of learners with autism. The final chapter of this study provides a summary and conclusions of the findings. Recommendations arising from the findings and for future research are presented.

CHAPTER FIVE

SUMMARY OF FINDINGS AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, the researcher presented data analysis and discussion of the findings of this study. This final chapter presents a summary of findings that responded to the research questions. Recommendation from the findings and limitation of the study are provided. The chapter also outlined recommendations for future research.

5.2. Summary of findings

In this section the summary of findings that responded to the two research questions are provided.

5.2.1 Communication strategies used in class with learners with autism are diverse

The findings of this theme showed that there is no set formula to strategies that teachers use in order to facilitate communication with learners with autism in the classroom. The findings show, however, that there were guiding factors that were applicable across the schools and to all teachers. Many of these have been outlined in the literature in Chapter Two, especially arguing the fact that learners with autism are diverse and their needs are unique. Broadly, teachers identified the picture-based augmentative strategy, which was dominant in all teachers and during observation, auditory learning and gestural prompts as classroom communication strategies.

There was variability of how these strategies were used in the classroom. The study shows that a wide range of activities were involved and communication strategies that the teachers identified in teaching learners with autism. As a result, these learners were able to participate actively in the classroom and subsequently improve their learning. Improved learning was conceptualised as: enhancing learners' expression and improving learners' academic skills. For example, teachers mentioned that they use communication strategies to attract learners' attention, to give instructions, to explain, to clarify the subject matter and learners' tasks. The participants agreed that learners with autism are capable of learning and all strategies employed were intended to improve learning.

Another common element shared by all the participants of this study was the active role that learners with autism play in their own learning. Most teachers from both schools indicated that communication is not a one-way process, from the teacher to the learners, but the other way round too. That is, learners with autism are capable of initiating communication, as this case study has shown. The participants indicated that their learners would use gestural prompts to call the teachers' attention,

such as pulling the teacher towards the door, if they want to go to the toilet or pointing to pictures of taps or mugs, if they need water. The findings point to the issue that learners with autism are not just 'passive' clients, but are capable of taking care of certain conditions in their own lives. Therefore, the variability of communication strategies employed in the classroom is an important part of these learners' holistic development and the most effective approaches to meet the unique and diverse needs of learners with autism.

5.2.2 Ways of facilitating communication strategies are mutually dependent

Teachers in this study had varying ways which may enable effective communication strategies used by teachers with learners with autism in the classroom context. As findings of this study have shown, participants mentioned there are many collaborators and resources that they use, and as a result, evidencing growth in teaching these learners. Some of the collaborators included: other teachers, having supportive and committed HoDs interested in staff development and life-long learning in autism education; SMT members who support teachers and create safe space for teachers to share their challenges and provide support. In some cases, teachers work together with personnel, such as, occupational therapists and speech therapists who have expert knowledge and skills in the field of autism. In this regard, teachers have access to these experts who in turn enhance the ways in which they facilitate communication with learners with autism. Working with parents of these learners was also identified as enabling by some participants. It was rewarding for the teacher because parents had a 'voice' in reshaping communication strategies used in the classroom. School artefacts, such as high or low technologies or teacher-made resources enabled the teachers an opportunity to enhance classroom communication with learners with autism. This emphasises the notion that teachers should be agents of change and work with other people to make sure that all barriers pertaining to learning are removed.

While there were clearly positive advantages of having many stakeholders that the teacher can work with, the roles of the teacher and other stakeholder were not always clearly defined. There was also an underlying perception that not all teachers were the 'experts' in the field of autism. For example, it was important to note that they relied on school-based therapists as some challenges were too difficult for teachers to handle. The findings, therefore, emphasise that teachers need on-going professional development and support in order to facilitate effective communication with learners with autism. All the participants agreed that using a team approach and open communication with all stakeholders is a necessity in programmes which includes speech therapy , occupational therapy, medical services, and psychological services aimed at all learners, including learners with autism and most importantly

guidance and counselling particularly to parents in order to understand the support and intervention programmes for instance drooling, toilet training, feeding skills , ABA and IEP that are designed for learners since these programmes takes place at school and has to be carried over at home as well by parents.

5.3 RECOMMENDATIONS

As evidence shows in this study, teachers at these selected schools are making every effort to improve communication with learners with autism, but some recommendations must be considered based on the findings of this study. These recommendations require a strong collaboration between various stakeholders.

- Learners with autism need quality education and all barriers need to be taught, with shared understanding by all the stakeholders. Open communication between teachers, SMT, therapists and parents, helps all parties to understand learners' needs and behaviours more fully (Robertson et al., 2003).

- Awareness of autism should be grounded within the integrated approach to education, including, policies, programmes, guidelines and implementation. It should not be reliant upon special schools or a single staff member, but rather supported by the Ministry of Basic Education.

- Financial resources should be made available for a compulsory module on communication strategies with learners with autism targeting pre-service teachers, matched with students' level of study or degree.

- Professional development and support for in-service teachers is necessary and must be planned, implemented, flexible and context-based. Each school must be provided with such information annually at the beginning of each academic year.

- District-based support teams should work with schools to ensure that schools develop school policies on autism which are relevant to their needs and context.

- Special Schools should be resource centres and ongoing evaluation of these schools is necessary. Financial resources should be made for employment of specialist staff in autism, ongoing staff development and support.

- Integration of Information Technologies is necessary and schools should be supported as part of an integrated approach to teaching learners with autism. Teachers need to be equipped with necessary skills so that they are able to respond to the needs of learners with autism

- Ongoing engagement with school members, including SMTs, HoDs, Teachers, Labour Relation Council (LRC) and parents must be undertaken to ensure that schools have proper policies and implementation processes, identify barriers and provide solutions of those barriers.
- Teachers '*Indaba*' or '*Imbizo*' should be encouraged, whereby teachers share their experiences, challenges, and successes. This must be undertaken to shape support but also learn from one another about curriculum differentiation, especially in autism education.
- A wide variety of school activities, in class or outside the classroom should be encouraged, as a means to hear learners' voices and provide on-going support which matches their needs.

5.4 Limitations

The literature demonstrates that there is no research which is purely free from limitations. In the context of this study, the major limitations that have been identified are related to the methodological issues, such as sample limitations in this study that have been identified.

The sample size was limited in two schools the researcher used only five (5) teachers out of twenty one teachers. In the other school the sample size was five (5) teachers out of forty teachers. The sample size excluded the voices of the majority of teachers from each school where their voices could have been heard therefore, the research findings could not be generalised. However, it is hoped that some important findings and themes have been told.

A further limitation of this study was the make-up of the sample. Only teachers were involved in the study and excluded parents, autism specialists, representatives of the Ministry of Basic Education or learners' voices as insiders' perspectives in this regard. To address this limitation, the background of each participant and the selected schools were provided. Care needs to be taken into consideration as the results relate to the selected teachers who participated in this study.

The study used a case study as research style, whereby different data generation methods were used with teachers. Qualitative research embraces a wide variety of research styles: for example, participatory action research, life history, self-study and so on. This limited the scope of data generation and analysis and hindered the triangulation of the research styles in generating data. In reporting the result of this study, it is important to note that methods and processes involved were related to the overall objectives of the study, as a means to clarify this limitation. It is against these that any conclusion and recommendations for further study must be considered, as described in the next section.

5.5 Recommendations for future research

The following recommendations for future research have to be considered in line with the findings of this study.

- This study involved only ten teachers from two schools out of twenty one Special Schools at the Umlazi district. Similar studies could be conducted in other schools.

- There are 72 Special Schools in KwaZulu-Natal province; therefore, a larger survey needs to be undertaken.

- This study has only focused on Special Schools, therefore, there is a need to conduct a research in Full Serviced Schools and in mainstream schools with learners with special educational needs (LSEN) classes to determine whether the overall research would have similar findings or would the research differ.

- Community-Based Participatory Research (CBPR) strategy needs to be investigated for evaluation of the effectiveness of a wide range of communication strategies for learners with autism, including from diverse backgrounds and cultures should be conducted.

5.6 Conclusion

The primary aim of this study was to identify classroom teaching strategies for facilitating communication with learners with autism. This study showed that teachers are demonstrating responsiveness towards educational needs and holistic development of learners with autism, to varying degrees and in different ways. Teachers employed distinct strategies and this was reflected in their unique responses. The strategies described in this study add to our shared understanding of the dynamic communication strategies in classrooms of learners with autism. Significantly, teachers seek assistance from other members of the school in order to facilitate effective classroom strategies with learners with autism. As the rich responses from the participants indicated, teaching learners with autism is embedded in the rich ecology of the school context. Some of the collaborators towards facilitating effective communication with learners with autism include colleagues, heads of departments who create opportunities for staff development, SMTs with knowledge of curriculum and planning programmes and supporting teachers. In some cases, other collaborators include involving parents and working with autism specialists in response to learners' unique needs. Thus, teachers' communication strategies with learners could be defined as 'communal teaching' which is in line with

the contention that 'it takes a community to raise a child'. Learners with autism could not be taught in isolation, teachers in this study show a promise in the country's aim of ensuring teachers as agents of change, removing barriers so that all learners reach the maximum potential.

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Appendix A: permission from the KZN department of education to conduct research

Appendix B: ethical clearance

Appendix C: permission to access the school

Appendix D: participant's consent letter

Appendix E: research instruments

Appendix F: coding instruments

Appendix G: editor's letter

Appendix H: turn-it-in report