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Surname, Initial(s). (2012). Title of the thesis or dissertation (Doctoral Thesis / Master's Dissertation). Johannesburg: University of Johannesburg. Available from: <http://hdl.handle.net/102000/0002> (Accessed: 22 August 2017).

Teachers' knowledge and practice in screening for Autism
Spectrum Disorder in a mainstream primary school

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MINOR DISSERTATION

submitted in partial fulfilment of the
requirements for the degree

MAGISTER EDUCATIONIS

in

EDUCATIONAL PSYCHOLOGY

in the

FACULTY OF EDUCATION

at the

UNIVERSITY OF JOHANNESBURG

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OCTOBER 2019



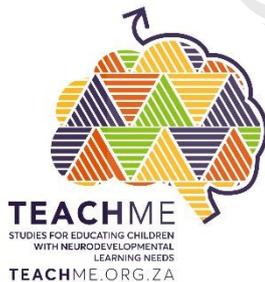
higher education
& training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



Co-funded by the European
Union

EDUCATING LEARNERS WITH NEURODEVELOPMENTAL LEARNING NEEDS

This research is sponsored through the Teaching and Learning Development Capacity Improvement Programme which is being implemented through a partnership between the Department of Higher Education and Training and the European Union.



ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my loved ones who have supported me unconditionally throughout this journey and who have encouraged me to keep on going despite the late hours and cancelled plans. Without your love, support and unwavering belief in my ability to complete this study, I would not have been able to succeed.

To my parents, I am forever grateful for your support in affording me the opportunity to further my studies and achieve my dream of becoming an Educational Psychologist. A special thanks to my mom who inspired this research topic through her personal journey of dealing with learners with ASD as a mainstream nursery school teacher.

A huge thank you to my supervisor, Dr Martyn Van der Merwe, whose time, commitment and constant encouragement allowed me to pursue my vision for this study. Thank you to my co-supervisor, Trishana Soni, for sharing her knowledgeable insight and passion for this topic. I would like to give credit to my editor, Ruth Nicola, who dedicated her time to ensuring the professional outcome of this study. Importantly, thank you to the Department of Higher Education and Training and the European Union who co-founded this research as part of the larger project involving studies on educating children with Neurodevelopmental Disorders.

Lastly, and most importantly, to the Almighty God. Through Him, there is no limit to what you can do, there is no obstacle you can't overcome, through Him, all things are possible.

ABSTRACT

Supporting children as they learn at their own pace is important for their early childhood development, especially for learners with Neurodevelopmental Disorders like Autism Spectrum Disorder (ASD). ASD is a growing epidemic with a worldwide increase in prevalence of children with ASD in mainstream primary schools. Learners are being diagnosed with ASD in the later school-going years, causing further long-term complications. Early identification and intervention for learners with ASD is vital for their overall emotional, physical and cognitive development. It is therefore essential for teachers to understand ASD and to be able to screen for ASD, using the appropriate tools. This study aims to explore, and provide critical insight into, teachers' knowledge and practice in appropriately screening for ASD in order to support learners with ASD in a mainstream primary school.

The theoretical framework of this study was based on Bronfenbrenner's Bioecological Systems Theory (1979) and Vygotsky's Social Constructionist View on Disability (1978). The supporting theories, the Developmental Theory of Autism and Theory of Mind (1995), were incorporated due to their relevance in understanding learners with ASD.

Using an interpretivist paradigm, this generic qualitative study used a purposive sample of seven Foundation Phase teachers in a mainstream primary school. These participants each used a Google Form to complete sentences for the researcher to gain insight into their general knowledge and understanding of ASD. Participants then took part in a focus group interview for the researcher to gain insight into what teachers do, and what tools and procedures teachers use to screen for ASD. Physical artefacts deemed relevant to this study were collected. Thematic analysis was used to interpret the themes that emerged from the analysis of data.

Findings indicated that teachers have limited knowledge on ASD due to their lack of training on the disorder. Teachers appear to resist changes in their role when faced with learners who have disorders like ASD. They face the challenge of the lack of appropriate teaching resources and curricular adaptations to help provide inclusive support. Teachers relied heavily on the guidance and training of the on-site Occupational Therapists (OT) in this school, but also found value in inter-collegial teacher collaboration. Finally,

teachers experience pressure, intimidation, and distress when dealing with the parents of learners with identified struggles.

It is recommended that the school outsource appropriate formal training on ASD for teachers. Support in the form of on-going collaboration between colleagues is encouraged. Teachers are recommended to harness motivation and remain metacognitively and behaviourally active in their learning through self-study on ASD. Finally, it is recommended that the school establish and implement a comprehensive policy to manage and support the process of teaching and learning for learners within the system who experience barriers to learning. It is recommended that Educational Psychologists provide psychoeducation on ASD through presenting more workshops and training to schools and teachers, as part of a multidisciplinary team of professionals.

Keywords: Autism Spectrum Disorder, Neurodevelopmental Disorder, knowledge and practice, screening, support for teachers

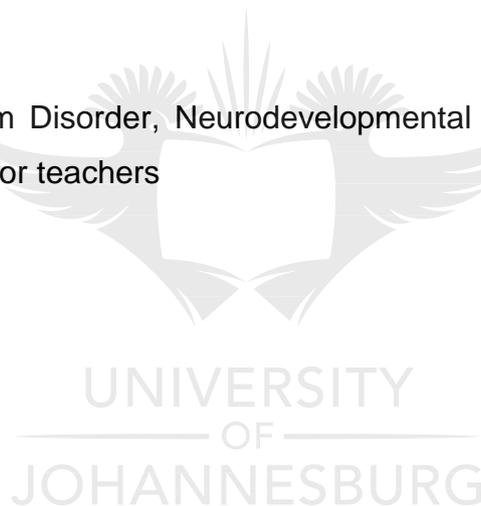


TABLE OF CONTENTS

	Page
CHAPTER 1: INTRODUCTION AND ORIENTATION TO THE STUDY	1
1.1 INTRODUCTION	1
1.1.1 Inclusive Education for Diverse Learners.....	2
1.2 RATIONALE	4
1.2.1 Screening and Early Interventions for ASD	7
1.3 PROBLEM STATEMENT	9
1.4 RESEARCH QUESTIONS.....	9
1.4.1 Main Research Question.....	9
1.4.2 Secondary Questions	10
1.5 PURPOSE and AIM OF THE STUDY.....	10
1.5.1 Research Aim	10
1.5.2 Research Objectives.....	11
1.6 CLARIFICATION OF KEY TERMS	11
1.6.1 Autism Spectrum Disorder (ASD).....	11
1.6.2 Mainstream School	11
1.6.3 Screening, Identification, Assessment and Support (SIAS) Policy (December 2014).....	12
1.6.4 School Based Support Team (SBST)	12
1.6.5 Red Flags	12
1.7 THEORETICAL FRAMEWORK.....	13
1.7.1 Bronfenbrenner’s Bioecological Systems Theory	13
1.8 RESEARCH DESIGN AND METHODOLOGY.....	17
1.9 CONCLUSION.....	19
1.10 ORGANISATION OF CHAPTERS.....	20
CHAPTER 2: LITERATURE REVIEW	21
2.1 INTRODUCTION	21
2.2 THEORETICAL FRAMEWORK.....	21
2.2.1 An Ecosystemic View on Autism Spectrum Disorder	21
2.2.2 A Developmental Theory of Autism.....	25
2.2.3 Theory of Mind.....	27
2.3 AUTISM SPECTRUM DISORDER (ASD).....	32
2.3.1 Diagnostics Criteria and Classification of ASD	32
2.3.2 Nature vs Nurture	32
2.3.3 Prevalence of ASD.....	33

2.3.4 ASD and Education	34
2.4 INCLUSIVE EDUCATION.....	35
2.4.1 Screening, Identification, Assessment and Support Policy (SIAS) (2014)	36
2.5 TEACHER SUPPORT FOR ASD	37
2.5.1 Teacher Knowledge and Practice.....	38
2.5.2 Appropriate Screening	40
2.6 CHAPTER SUMMARY	41
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY	42
3.1 INTRODUCTION	42
3.2 DESIGN AND METHODOLOGY	42
3.2.1 Paradigm Informing the Study	42
3.2.2 Research Approach	43
3.2.3 Time Horizons	44
3.2.4 Methodology.....	44
3.2.5 Data Analysis.....	51
3.3 QUALITY CRITERIA.....	52
3.3.1 Validity	53
3.3.2 Reliability.....	53
3.3.3 Transferability	54
3.4 ETHICAL CONSIDERATIONS	54
3.5 CHAPTER SUMMARY	55
CHAPTER 4: DATA ANALYSIS AND DISCUSSION.....	56
4.1 INTRODUCTION	56
4.2 CONTEXT FOR THE ANALYSIS	56
4.2.1 Data Collection.....	56
4.3 ANALYSIS PROTOCOL	58
4.4 ORGANISATION OF FINDINGS	62
4.5 THEMATIC EXPLORATION.....	63
4.5.1 Theme 1: Manifested Awareness of Autism Spectrum Disorder (ASD).....	63
4.5.2 Theme 2: Knowledge Ambiguity	68
4.5.3 Theme 3: Affective Capability	74
4.5.4 Theme 4: Inter-Collegial Reliance	78
4.5.5 Theme 5: Aversion to Change	80
4.6 COLLATERAL FINDINGS	82
4.6.1 Theme 1: Reputational Constraints	82
4.7 CHAPTER SUMMARY	83

CHAPTER 5: FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	84
5.1 INTRODUCTION	84
5.2 SUMMARY OF FINDINGS	84
5.3 COLLATERAL FINDINGS	88
5.4 CONCLUSIONS AND RECOMMENDATIONS BASED ON FINDINGS	88
5.4.1 Conclusions	89
5.4.2 Conclusions Relating to the Theoretical Framework	92
5.4.3 Recommendations for Practice.....	94
5.4.4 Recommendations for Educational Psychologists	97
5.4.5 Recommendations for Future Research	97
5.5 CRITICAL REFLECTION AND LIMITATIONS OF THE STUDY	98
5.6 STRENGTHS OF THE STUDY	99
5.7 RESEARCHER BIAS.....	100
5.8 CONCLUDING REMARKS.....	101
REFERENCE LIST	103
APPENDIX A: ETHICAL CLEARANCE– UNIVERSITY OF JOHANNESBURG ..	122
APPENDIX B: RESEARCH SITE APPROVAL	123
APPENDIX C: PARTICIPANT CONSENT AND CONFIDENTIALITY	124
APPENDIX D: FOCUS GROUP INTERVIEW SCHEDULE	126
APPENDIX E: SENTENCE COMPLETION GOOGLE FORM.....	130
APPENDIX F 1: PHYSICAL ARTEFACT 1	133
APPENDIX F 2: PHYSICAL ARTEFACT 2	134
APPENDIX G: SAMPLE OF FOCUS GROUP INTERVIEW TRANSCRIPTION ...	136
APPENDIX H: SAMPLE OF FOCUS GROUP INTERVIEW CONTENT ANAYLSIS	137
APPENDIX I: SAMPLE OF SENTENCE COMPLETION GOOGLE FORM CONTENT ANAYLSIS.....	138
APPENDIX J: SAMPLE OF CONTENT ANALYSIS CODING	139
APPENDIX K: DIAGNOSTIC CRITERIA OF AUTISM SPECTRUM DISORDER .	140

CHAPTER 1:

INTRODUCTION AND ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Childhood is a sensitive phase in one's life. The nurturing and support that one receives during this period has a profound impact on one's development into adulthood. For a child to achieve optimal development into adulthood, parents and schools need to meet learners' individual specialised needs so that holistic development of their physical, cognitive and emotional aspects is possible (Shastry, 2018). Supporting children as they learn at their own pace is important for their early childhood development, especially for learners with Neurodevelopmental Disorders, which create barriers to learning. Neurodevelopmental Disorders (NDDs) refer to a group of disorders where there is an impairment in some aspect of mental development (Bishop & Rutter, 2007). According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) of the American Psychiatric Association (2013), Neurodevelopmental Disorders are a group of conditions with onset in the developmental periods of early infancy. These disorders typically manifest in the younger pre-school years. These disorders are characterised by deficits that produce impairments of personal, social, academic or occupational functioning and can present as delays in achieving developmental milestones. This becomes more apparent in the young school-going child.

Since the notion of Inclusive Education was put forward in the Education White Paper 6 (EWP6) (Department of Education, 2001), there are now more learners diagnosed with mild to more severe Neurodevelopmental Disorders in mainstream schools (p. 26). Thus, teachers and other stakeholders require additional competence and more specialised skills to identify, assess and support this specific group of learners. This support includes the development of individualised learning support plans (ISPs), curriculum differentiation, and adapted classroom practices (p. 26). According to research by the Department of Higher Education and Training, there appears to be limited teacher education in pre-service teaching qualifications to support learners who

exhibit different Neurodevelopmental Disorders (Dunbar-Krige & Fourie, 2018). This is specifically the case regarding Autism Spectrum Disorder.

As discussed by Homberg, Kyzar, Nguyen, Norton, Pittman, Poudel, Kalueff, (2016), NDDs are highly prevalent and severely debilitating brain illnesses caused by atypical brain growth and development, which results in cognitive, social, motor, language and affective disabilities. A common NDD is Autism Spectrum Disorder (ASD), which presents with abnormal development, central nervous system issues, immune irregularities and digestive illness caused by a combination of environmental and genetic factors (Star Academy, 2011).

Autism Spectrum Disorder has become a growing epidemic that affects one in every 36 children in America. ASD is five times more prevalent in boys (Alspaugh-Jackson & Penrod, 2017). As stated by Brock, Jimerson and Hansen (2007), a worldwide increase in individuals identified with ASD in the past decade leads to the need for early identification and intervention in order to improve outcomes for children with Autism. Most children are identified within the school environment using school resources (Brock, Jimerson, & Hansen, 2007). Within the South African context, the Department of Basic Education (DBE) Policy on Screening, Identification, Assessment and Support (SIAS) is a policy that requires teachers to adhere to the protocol of screening, identifying and assessing barriers to learning experienced by learners (Department of Basic Education, 2014).

1.1.1 Inclusive Education for Diverse Learners

Being able to recognise diversity amongst learners and their barriers to learning is important. Recognising learner diversity helps teachers tailor content and teaching methods. It allows them to communicate their awareness and appreciation for the learners' unique needs as individuals in order to maximise their learning (Plank & Rohdieck, 2007). Lynch (2016) agrees with the notion of recognising learner diversity. He highlights the teacher's responsibility in recognising diversity and structuring learners' lessons to reflect their differences. Being able to recognise these diverse needs of learners allows for the act of inclusive education.

As described by Greenstein (2016), the act of radical inclusive education explores how current education practices exclude and fail many students with disabilities, and one needs to recognise the value of diversity, needs and capacities of each individual to address these inequalities. Environmental accommodation concerns were raised regarding the incompatibility of the idea of inclusion and the reality of mainstream school provisions. Inclusive education is more than just the placement of students; it is also the environmental accommodations provided by the school to facilitate the students (Greenstein, 2016). Accommodations are the changes made by the school or teacher to remove barriers to learning, which results in changing *how* students learn and not *what* they learn. This is to ensure equal education for all students (Lee, 2015). Many mainstream schools have started to acknowledge the need for equal opportunities for those with disorders and barriers. Schools have begun to integrate creative attributes of communication, socialisation and imagination into teaching in order to achieve inclusivity by adapting traditional methods. These methods are teacher-focused, reinforce the power differential between students and the teacher and enforce standards of behaviour (CCSS, 2017). These, however, are methods that learners with ASD struggle with and therefore do not benefit from these adaptations made within the classroom (Hewit, 2004). One needs to be aware of the individual's unique ways of thinking and viewing the world to adapt traditional teaching methods for all learners. Therefore, in order for the mainstream classroom to implement inclusive principles and interventions, teachers need to be able to identify the need for special accommodation and flexibility in curricula. The ability to appropriately screen for Neurodevelopmental Disorders such as ASD is vital.

Having discussed the importance of inclusivity and support for learners with barriers to learning, it is evidently imperative that schools provide the necessary Autism-specific education and interventions. Therefore, as discussed, teachers need thorough knowledge of ASD in order to implement these interventions (Hendrick, 2011). It is therefore essential for this study to explore and understand teachers' knowledge and practice in appropriately screening for Autism Spectrum Disorder. According to Saggars (2016), a lack of training on Autism-related professional development is a key barrier to supporting the complex needs of learners on the Autism spectrum.

1.2 RATIONALE

A UNICEF census conducted over 10 years (2001-2011) indicates that there are approximately 474 000 children living with severe disabilities in South Africa (UNICEF, 2012). According to Boonzaier (2017), developmental disability research has not been a priority in Africa, with few funds available and few skilled people trained to identify these disabilities. Regarding Neurodevelopmental Disorders, high-income countries have identified a high rate of Autism and almost everything we know about this specific disorder comes from these areas. "To diagnose Autism Spectrum Disorder in a particular culture, we need to be familiar with what behaviours are acceptable and unacceptable in that culture" (Boonzaier, 2017). Thus, standardised diagnostic and screening tools that are developed in these "high-income countries" have been shown to be inefficient in the South African context where different cultures are prevalent. It is therefore essential to recognise the opportunity for improvement in the awareness and identification of characteristics of such disorders in this country. We also need to recognise the importance of the development and implementation of South African-specific screening tools, although this is not the focus of this minor dissertation.

As noted earlier, the prevalence of ASD in schools could be located in any school. The Department of Basic Education (DBE) is responsible for the following schools within the South African context; public schools (which includes specialised education schools) and private/independent schools (which includes specialised education schools).

Public schools are funded by the government and operate at a local level in their province, which means that education varies between areas (Government Gazette, 2011). Public schools follow the National Curriculum Statement (NCS) and thus adhere to the Curriculum Assessment Policy Statement (CAPS).

The government does not fund private schools in South Africa (Expatica, 2018). These private/independent schools often have smaller class sizes and usually offer more extracurricular activities. Private/independent schools can select their own curriculum and examinations as they do not have to follow the NCS as long as their curriculum of choice meets the standards prescribed by the NCS (Gazette, 2010). Most private/independent schools often choose to follow the Independent Examinations Board (IEB). They are also permitted to include international exams like the Cambridge International Examinations (CIE), O and A-levels from the United Kingdom or the

Scholastic Aptitude test (SAT) from the United States, concurrently. These international examinations need to be approved by Higher Education South Africa (HESA) (Gazette, 2010). It is important to note this information as this study focused on, and took place in, a private/independent school.

The GDE established and approved the Screening, Identification, Assessment and Support (SIAS) policy in 2014, which is applicable to all schools, yet compulsory for public schools. The policy was designed to manage and support the process of teaching and learning which affects learners within the system who experience barriers to learning. It aims to promote maximum participation by all learners (Department of Education, 2008). This process provides the most effective support plan for learners with Neurodevelopmental Disorders. However, little emphasis is placed on the SIAS policy within the education system, despite teachers being alerted during their training to the fact that they need to follow such processes when identifying barriers to learning (Roberts, 2011). Subsequently, teachers continue to struggle with implementing inclusion within their classrooms (Nel, Tlale, Engelbrecht, & Nel, 2016).

A select few private schools, schools funded by the Department of Basic Education, and a few mainstream schools, have shown some progress in supporting learners with various needs within the classroom through curriculum and teaching strategy adaptations (Donohue & Bornman, 2014). Despite this, support has proven insufficient in the past as teachers are not sufficiently trained in the screening and identification of such needs. As stated by Swart, Engelbrecht, Eloff & Pettipher, (2002), there is a need for training due to the “*disturbing lack of skills in identifying the needs of learners within the system and evaluating support effectiveness*”. It can be assumed that the lack of training on the SIAS policy can lead to lack of understanding by the schools of how it is supposed to be implemented. This is due to little guidance on effective implementation of the policy (Donohue & Bornman, 2014). It is argued that the lack of understanding of the implementation of the SIAS policy could lead to the increase of unaddressed neurodevelopmental challenges in the classroom, including ASD.

According to Donohue and Bornman (2014), addressing and accommodating extrinsic barriers to learning requires more explicit guidelines from the DBE. The researcher argues in this study that the implementation of the SIAS policy in schools may be associated with possible misinterpretations as well as a lack of knowledge and skills

required to appropriately implement it. One could argue that the '*Identification*' step in this SIAS process is often misinterpreted by non-healthcare professionals, such as teachers, and can lead to illegitimate conclusions based upon incorrect assumptions regarding the policy process.

For teachers to make legitimate conclusions, they should be trained through courses or workshops to identify red flags of neurodevelopmental disorders like ASD. Red flags are warning signs that indicate an individual should be further evaluated (in this case warning signs specific to ASD) (Wetherby, et al., 2004). Further investigation of these red flags then leads to the '*identification*' of disorders like ASD. Therefore, to be able to move from acknowledging the need for further evaluation and identifying red flags to the identification of the disorder, one first requires some measure of knowledge and understanding of the disorder. When teachers have insufficient knowledge and understanding of the disorder, incorrect assumptions are made, which results in incorrect identification and labelling.

It can be argued that these incorrect assumptions are underpinned by the 'medical' model stance. The 'medical' model stance considers disabilities to be caused by a predisposition to biological impairments within the individual with an organic or physical cause. The 'medical' model shows little regard for external environmental factors (McLeod, 2014).

However, Bronfenbrenner's Bioecological Systems Theory takes all systems and the surrounding environment into consideration when considering learners with diverse abilities and needs. Although the medical model offers frameworks for understanding impairments and the impact on the individual, one needs to be aware of the individual's unique and alternative ways of thinking and viewing the world and systems around them, as emphasised in the Bioecological Systems Theory. Thus, it is important to consider both models in understanding an individual holistically. A further implication may also be that the often 'rigid' and 'institutional' methods employed in the mainstream environment may need to be adjusted to accommodate and include all learners adequately (Greenstein, 2016).

Therefore, it can be argued that teachers are expected to be involved in the identification of NDD barriers but seldom have the training and knowledge to

appropriately screen for these disorders, such as ASD, due to this lack of training and guidance as discussed by Donohue and Bornman (2014).

1.2.1 Screening and Early Interventions for ASD

If interventions are started at an early age, children with developmental disorders have a greater chance of successful outcomes (Karanth & Chandhok, 2013). This statement is particularly true for Autism Spectrum Disorder as early intervention leads to improvements in areas of deficits and prevents the decline of intellectual development experienced by learners with ASD. As explained by Bottcher and Dammeyer (2016), the biological time window for the development of certain abilities, such as language development, stresses the crucial need for early interventions (Bottcher & Dammeyer, 2016). According to Chong (2017), diagnosing ASD in Florida before the age of 24 months is difficult, yet signs of Autism Spectrum Disorder can be detected by the age of 18 months. Intensive treatment may reverse symptoms. According to Setokoe (2018), it is believed that a child with ASD is born every 45 minutes in South Africa, yet these diagnoses are only made at an average age of three to four years old. Therefore, it is essential for teachers to have the knowledge to be able to identify learners exhibiting the warning signs or 'red flags' of ASD in order to provide early intervention.

Identifying and diagnosing at an early age would not only allow for earlier intervention but would also allow the teacher to support the learners' development in an academic, emotional and physical capacity. The teacher would develop awareness of the learners' unique needs and would be able to act within their best interests.

This intervention and support would likely result in developmental improvements in interactions with peers, decreased symptomology and an increase in IQ scores and language ability due to the plasticity of the young, developing brain (Baird et al., 2006). Grinaker et al. (2012), identify the need for South African schools to perform appropriate screening and early diagnosis of ASD as healthcare resources and facilities are limited. This would reduce the burden on education and healthcare systems. As discussed by Lombard (2018), parents are often the first to notice that their child is showing unusual behaviour, such as failing to make eye contact, not responding to their name being called, playing with toys in an unusual manner, and repetitive actions. Until the age of 36 months, babies should ideally be screened for

developmental milestones during routine visits to the paediatrician or at an accessible clinic. Such assessments could determine if the child needs to be referred to another specialist. Due to the increased lack of access to health services in South Africa, as stated by McLaren, Ardington and Liebbrandt (2013), and the busy career-driven lives of parents, these important steps are not always possible to take. Thus, it is essential for the teacher to be able to notice unusual behaviour (as they spend most of the day with the learners) and know when and how to appropriately screen for these disorders for early intervention.

According to Springer, Toorn, Laughton, and Kidd (2013), *“studies have yet to be done to determine the prevalence and characteristics of ASD in Africa”*. Recent studies such as research on the *‘Psychometric Analysis of the Systematic Observation of Red Flags for Autism Spectrum Disorder in Toddlers’* by Dow, Guthrie, Stronach and Wetherby (2017), as well as the *‘Impact of Early Interventions on Children with Autism Spectrum Disorders as Measured by Inclusion and Retention in Mainstream Schools’* by Peditr (2013), have indicated the dearth of literature and research available on red flag identification and the importance of early interventions. However, there appears to be a lack of literature regarding the knowledge that teachers in mainstream schools need to screen for ASD and their ability to see when it is necessary. As stated by Greenstein (2016), *“those who set themselves up as educators must themselves be educated”*. Thus, teachers evidently need to be educated in order to offer maximum education to learners. As discussed in the preceding argument, there appears to be a lack of understanding amongst teachers of how the Screening, Identification, Assessment and Support (SIAS) policy should be implemented in schools in order to provide the most effective support plan for learners with neurodevelopmental challenges.

Thus, this study wished to bridge the gap between the already identified prevalence of ASD and screening measures developed for ASD, and teachers’ knowledge and practice in appropriately screening for ASD. Therefore, the main question this study attempted to answer in order to provide the necessary support was: *“What do teachers know about Autism Spectrum Disorder and how do they practise appropriate screening for Autism Spectrum Disorder in a mainstream primary school?”*

1.3 PROBLEM STATEMENT

In view of the above arguments, it is apparent that learners with Neurodevelopmental Disorders do not always receive the collaborative support needed in the schooling environment. There appears to be a lack of understanding of how the Screening, Identification, Assessment and Support (SIAS) policy should be implemented in schools in order to provide the most effective support plan for learners with neurodevelopmental challenges. Early interventions are an important and successful means in the care and treatment of individuals with ASD. As discussed by Brock, Jimerson and Hansen (2007), the prevalence of Autism Spectrum Disorder is rising each year, with more learners being diagnosed in the later school-going years, causing further long-term complications. This leads to the increase of neurodevelopmental challenges for learners who have ASD. For this reason, identifying red flags in the classroom environment plays a vital role in providing the individual with the support and interventions required. For these learners with ASD to avoid slipping through the cracks of the education system, teachers need to be able to screen for ASD while selecting the appropriate tools and following acceptable procedures. This research The purpose of this study is to provide critical insight into teachers' knowledge and practice in appropriately screening for ASD in order to support learners in a mainstream primary school.

1.4 RESEARCH QUESTIONS

A research question focuses the study at hand while directing all stages of inquiry to guide the researcher throughout. (Jansen, 2007). The following main and secondary research questions guided this study.

1.4.1 Main Research Question

What do teachers know about Autism Spectrum Disorder and how do they practise appropriate screening for Autism Spectrum Disorder in a mainstream primary school?

1.4.2 Secondary Questions

The sub questions that were answered in this study are as follows:

1. What are the tools teachers select to screen for ASD in a mainstream primary school?
2. Why do teachers select specific tools to screen for ASD in a mainstream primary school?
3. What procedures are followed by teachers in a mainstream primary school when screening for ASD?

With these questions, the researcher attempted to gain an understanding of the knowledge and practice of teachers in appropriately screening for ASD. This was followed by exploration of the procedures that teachers follow to address Neurodevelopmental Disorders in the classroom.

1.5 PURPOSE and AIM OF THE STUDY

The main purpose of this study was to contribute to the larger project aim of investigating and describing how principals, SBSTs and teachers in primary schools monitor and implement the Screening, Identification, Assessment and Support (SIAS) policy in order to determine the appropriate support and/or placement of learners with Neurodevelopmental Disorders.

The specific aim of this study was to explore, understand and describe teachers' knowledge and practice in appropriately screening for ASD in a mainstream primary school in order to implement Autism specific interventions. The underlying assumption of the study is that if teachers were able to identify possible characteristics of ASD at an early school age, they would be able to improve the outcomes for the child by means of early responsive intervention, support and appropriate placement of the learner as indicated by the SIAS policy.

1.5.1 Research Aim

Based on the research questions, the aim of this specific study was:

- To explore and describe teachers' knowledge and practice in appropriately screening for Autism Spectrum Disorder in a mainstream primary classroom in order to implement Autism specific interventions.

1.5.2 Research Objectives

Based on the research aim, the objectives of this study were:

- To explore and describe the tools teachers select to screen for Autism Spectrum Disorder in a mainstream primary school;
- To explore the procedures that teachers follow when screening for Autism Spectrum Disorder in a mainstream primary school.

1.6 CLARIFICATION OF KEY TERMS

1.6.1 Autism Spectrum Disorder (ASD)

ASD refers to a group of complex disorders of brain development. Neurobiological aspects of ASD include anatomical abnormalities identified in many areas of the brain (Baron-Cohen, 2004, p.945). Thus, the individual communicates, interacts, behaves and learns in ways that are different to the 'neurotypical' learner. It is a life-long neurodevelopmental disorder. Individuals with ASD need support as they develop ongoing challenges in language, social interaction, flexibility in thinking, as well as in behaviour and sensory perception (Lombard, 2018). According to the Diagnostic Statistical Manual of Mental Disorders, 5th Edition (DSM-5) (2013), the diagnostic criteria of ASD includes persistent deficits in social communication and social interactions across multiple contexts such as social reciprocity, nonverbal communicative behaviour used for social interaction and skills in developing, maintaining and understanding relationships. The diagnostic criteria also includes restricted or repetitive patterns of behaviour, interests or activities. Symptoms may change with development and may be masked by coping mechanisms. These symptoms must cause significant impairment in one's social, occupational or other important areas of current functioning. ASD causes clinically significant impairments in social, occupational or other important areas of current functioning.

1.6.2 Mainstream School

This refers to a school that principally meets the needs of learners who do not have special educational needs and is therefore an 'ordinary' school (The National Autistic Society, 2008). Mainstreaming refers to a school placing children with special needs into classrooms with peers who do not have disabilities or barriers to learning. This is mandated by the government because of the right that each child has to be educated

with the general education population with no means of discrimination against them (Masters in Special Education Program Guide, 2018).

1.6.3 Screening, Identification, Assessment and Support (SIAS) Policy (December 2014)

Screening refers to evaluating a large number of subjects in order to identify those with a specific set of attributes or characteristics (Screening, 2018). The SIAS policy is designed to manage and support the process of teaching and learning which affects learners within the system who experience barriers to learning. It aims to promote maximum participation by all learners, and thus inclusion (Department of Education, 2008).

1.6.4 School Based Support Team (SBST)

This is a support team referred to in the Education White Paper 6. It is an on-going collaborative problem-solving unit of school personnel based at the school, who meet regularly to assist teacher development and implement instructional strategies that support the learning of students (School Based Support Team, 2015). The South African Department of Education established the SBST in schools to deal with inclusive education and its implementation at school level. These teams organise support and the establishment of individualised education programmes for vulnerable learners or those who have barriers to learning (Makoelle, 2014).

1.6.5 Red Flags

Red flags are 'absolute indicators' which indicate that an individual should be further evaluated (Wetherby, et al., 2004). Red flags of Autism are the warning signs that attract attention based upon unusual or unique behaviours, which are not typically appropriate according to developmental milestones of a specific age. According to the DSM-5 (2013), some common red flags of ASD include impairments in reciprocal social communication and social interaction; restricted, repetitive patterns of behaviour, interest or activities; lack of non-verbal communication and eye contact; lack of verbal communication; lack of relationships, play and object exploration; being easily upset by routine change; sensory sensitivities; self-stimulatory behaviours such as hand flapping or rocking.

1.7 THEORETICAL FRAMEWORK

A theoretical framework is a blueprint for inquiry. It consists of interrelated concepts and theories that guide a study and provides a connection between the researcher and existing knowledge in order to bring structure to the researcher's stance (Mertz & Anfara , 2014). This study focuses on the theory of Bronfenbrenner's Bioecological Model.

1.7.1 Bronfenbrenner's Bioecological Systems Theory

The discussion below outlines the basic theory of Bronfenbrenner's Bioecological Systems Theory (1979). This theory and the applications in terms of ASD are further discussed in more detail in Chapter 2 (2.2.1).

Bronfenbrenner (1979) developed a Bioecological Systems Model that proposes that the child is surrounded by levels of external influencing relationships and that each level plays a vital role in the holistic development and being of the individual (Leonard, 2011). As discussed by Scott-Croff (2017), research based on Bronfenbrenner's Bioecological Systems Theory noted that this ideology has been widely used to support children with Autism Spectrum Disorder.

Bronfenbrenner's Developmental Theory comprises the Microsystem, Mesosystem, Macrosystem and Exosystem, all of which interact with the Chronosystem, which brings in the dimension of time (p. 77). Sincero (2013) explains these five levels, otherwise referred to as environmental systems, which are encountered and may influence the child's behaviour and development.

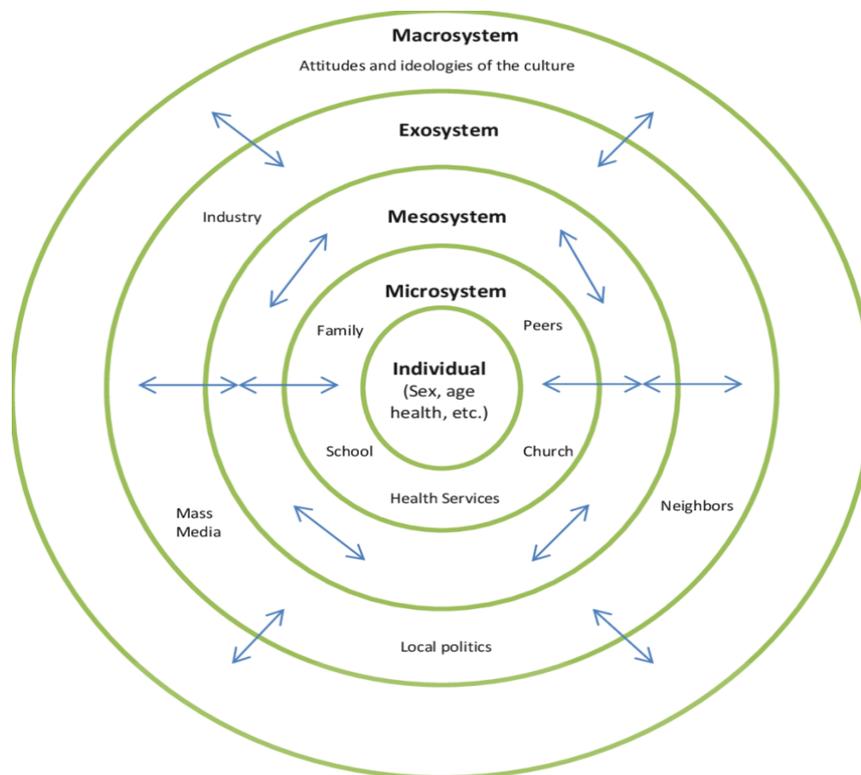


Figure 1.1 Bronfenbrenner's Bioecological Model (Woollett, 2016)

The first and innermost level is the Microsystem. This is the direct environment where face-to-face and direct social interactions take place between the child and their peers, teachers, friends, family, neighbours and other people of close contact. This is where the child develops and lives their daily life. The Mesosystem is the second inner level of cross-relationships and interactions between these small settings within the Microsystem. The Exosystem is the third level and involves the broader community where the child does not function directly or play an active role but feels the influence, for example, the kind of services offered in the child's surrounding community. The Macrosystem is the outermost level and includes socioeconomic status, cultural norms, morals, customs and societal conditions (Sincero, 2013).

With the primary importance of the individual's own biological development at the centre, this model identifies systems and the importance of the family composition in these systems. In addition to family members, other external influencing relationships and factors are also central as they serve as the nucleus of the child's development. For instance, the interactions of family members and other important role players, such as teachers and the school, with an individual who has ASD are important to the shaping and development of that individual. Thus, one needs to comprehend the facets of the environments that affect and help shape and develop a learner with ASD in order to understand that specific learner and their needs. The focus of this study is

on the Mesosystemic level, where the interactions and relationships between Microsystems or connections between contexts are found (Impact of Special Needs, 2017). This study specifically looks at the relationship between school experiences and learners with ASD. Thus, Vygotsky's Social Constructionist Theory is incorporated into this study within the Mesosystem level of teacher and peer interaction and relations.

Vygotsky views disabilities from a social constructionist perspective, which indicates that the person develops in their socio-cultural context that includes cultural, contextual and discourse elements. Alfred (2002) speaks about important socio-cultural contexts for learning. The importance of teachers creating a learning environment where learners can participate without sacrificing their personal and cultural identity is vital in the learning process. Therefore, learners with ASD should be provided with a safe environment where they can participate regardless of their difficulties or required accommodations.

Alfred (2002), also speaks of the different contexts as sites for learning. These are the learner's interactions with their surrounding environment. Some examples of the environment include the family, community and the school, which brings in the concept of the Mesosystem of the Bioecological Systems Theory (1979). The importance of interactions and collaboration between the school and family of a learner with ASD is thus vital in their learning process.

Alfred (2002) explains discourse communities as contexts for learning which refers to how a group of people within the learner's context shapes their identity and their relationships within their social world. This element also links the Bioecological Systems Theory where community involvement is important in the identity of an individual.

The socio-cultural context acts as a means to develop cognitively through shared activity with adults, and in this case, teachers. (Dovey, 2016). For teachers to be able to engage in shared activity with learners with ASD, teachers need to have acquired knowledge on how to engage in terms of their own culture, context and discourse.

Vygotsky's theory of knowledge acquisition was drawn on with specific focus on teacher knowledge. Vygotsky refers to the gap between the level of potential development that an individual can reach with the help and guidance of a more

knowledgeable individual (the teacher) and the level at which they currently function, as the zone of proximal development (ZPD) (Hurst, 2018). This area is where the most sensitive instruction and guidance should occur. Hurst (2018) also explains how scaffolding is the support mechanism that helps an individual to successfully perform a task within their ZPD. *“Learners with disabilities often do not conform to how schools are arranged and may find participation in learning activities difficult without the needed support”* (Dovey, 2016). Aligned with Vygotsky’s view on learners with disabilities, teachers need to be able to identify the way in which they are developing and participating differently to other students in the class. This falls within the Mesosystemic level where teachers offer support and scaffolding to help these learners reach their ZPD.

Vygotsky speaks of a complex structure of disability with primary disability based on *primary* impairment and *secondary* and *tertiary* disability based on cultural distortions of socially conditioned, higher mental functions. These socially conditioned interactions and cultural distortions take place on the Macrosystemic level. According to Rodina (2006), this theory determines *primary* disorders to be visual, language, speech-related and motor related impairments (Neurodevelopmental Disorders). If not addressed, these disorders lead to *secondary* disabilities due to exclusion within the classroom environment. Therefore, *“the importance of a distinction between primary and succeeding symptoms in the study of upbringing, teaching and education of children with different disabilities”* is stressed (Rodina, 2006).

Secondary disabilities are identified as results of social and psychological consequences of unattended *primary* disabilities and may be prevented and eliminated by medical and educational means – thus Mesosystemic interventions. The way in which learners with ASD think, speak and behave differs from other children and is misunderstood by mainstream culture. In order to accommodate and appropriately place learners on the Autism Spectrum, the teacher needs to have an understanding and knowledge of the disorder. This would help to address the barriers that hinder participation. It is essential for this study to focus on learners with Neurodevelopmental Disorders, particularly ASD, and the importance of early identification of warning signs and appropriate scaffolding offered by teachers. Thus, the study focused on the Mesosystemic interactions and relationships between relevant individuals within the classroom.

1.8 RESEARCH DESIGN AND METHODOLOGY

The following discussion is a basic outline of the research design and methodology. An extensive explanation is provided in chapter 3.

SECTION	BRIEF DESCRIPTION
DESIGN & METHODOLOGY	
Paradigm informing the study	The main focus of this study was the interpretivist paradigm which is based upon the belief that reality is multiple and relative (Edirisingha, 2012).
Research approach	A bottom-up approach was used in this qualitative study to condense raw data and establish clear links between research objectives and findings (Thomas, 2003). This study focused on the qualitative approach where the researcher made sense of a social phenomenon by contrasting, comparing, cataloguing and classifying the object of study while building concepts and hypotheses in order to reach and understand a general pattern (van Zyl, 2012).
Time horizons	A cross-sectional time horizon was adopted to make comparisons at a single point in time during this study.
Methodology	This study made use of focus-group interviews, sentence completion and physical artefacts as qualitative tools to explore phenomenon through a variety of lenses (Nieuwenhuis, 2016)
METHODS	

Participant recruitment	Purposive sampling was implemented in this study. This non-randomised nature allowed the participants to represent a theoretical population. However, this participation was made voluntary.
Data collection	More than one method of data collection was used in order to gather a wide variety of information from various teachers to allow for in depth triangulation of findings. Data was collected through a completion of sentences exercise in Google Forms, followed by focus-group interviews. Both according to respective grade groups. Any relevant physical artefacts were also collected.
Data analysis	Data collection and data analysis is part of a cyclical, iterative and ongoing process (Nieuwenhuis, 2016). All data collection methods were analysed separately. In order to analyse the data gathered, a cyclical process of reflecting on data, identifying gaps in data and planning further data gathering took place. All data was analysed using Thematic Analysis in order to make sense of themes in the data collected. The six-step framework developed by Braun and Clarke (2006), was followed with emphasis placed on both the semantic and latent levels.
QUALITY CRITERIA	
Validity	To ensure validity, the researcher used descriptive validity where no fabrication or change of data during the gathering of

	data occurred. The focus-group interviews and sentence completion were facilitated in a controlled environment monitored by the researcher.
Reliability	The chosen methods of data collection are relevant to the study and were guided by the DSM-5 and other diagnostic information published on ASD. The data analysis was member-checked to ensure reliability of results, otherwise termed as 'rigour'.
Transferability	To ensure transferability of the study, data collection schedules and sources are provided as appendices. Findings are described in detail.
ETHICAL CONSIDERATIONS	
	All participants were voluntary, were over the age of eighteen and understood their role and rights in the study. Consent was obtained by all participants. Confidentiality was assured, by maintaining anonymity to ensure participant privacy and protection. The study was approved by the Gauteng Department of Education and received ethical clearance to conduct the research in an education institution, ethical clearance number: 2019-100.

1.9 CONCLUSION

In this chapter, the researcher has consolidated the issues around the increasing prevalence of ASD within the South African context. Specific focus on the prevalence of learners with ASD within the primary school years has also been discussed. The

importance of inclusive education for learners with ASD through early implementation of appropriate interventions by teachers has been explored. This chapter has also discussed the rationale, research questions, aims and objectives of the study accompanied by definitions of key terminology. Finally, this chapter introduced Bronfenbrenner's Bioecological System Theory and the placement of an individual within this model. The researcher intends to further explore and discuss the theories underpinning ASD while developing a holistic representation of learners with ASD within the education and broader environment. Chapter 2 will provide the literature review in detail.

1.10 ORGANISATION OF CHAPTERS

This Study is divided in the following chapters:

CHAPTER 2: Literature Review. In this chapter, the researcher has reviewed the literature available for this study. Bronfenbrenner's Bio ecological Systems Theory, as well as Autism-specific theories, have been explored in depth.

CHAPTER 3: Research Design and Methodology. This chapter explored the research approaches, collection and analysis of data and the trustworthiness of the study.

CHAPTER 4: Data Analysis. In this chapter, the data analysis process was explored along with the discussions of emerging themes from all data collection methods.

CHAPTER 5: Findings, Conclusion and Recommendations. This chapter discussed the findings in the context of existing literature while concluding with reflections and recommendations for further study, based upon these findings.

CHAPTER 2:

LITERATURE REVIEW

2.1 INTRODUCTION

With the prevalence of learners diagnosed with Autism Spectrum Disorder (ASD) rising each year (Alspaugh-Jackson & Penrod, 2017), it has become increasingly important for teachers to be able to recognise the characteristics and warning signs of ASD in order to provide appropriate screening and vital educational support.

This chapter reviews literature on the theoretical framework underpinning this study, Bronfenbrenner's Bioecological Systems Theory; on the complex development and characteristics of Autism Spectrum Disorder; and the implementation of the SIAS strategy in South Africa. The chapter will build incrementally on previous sections to facilitate a deeper understanding of the implications and fundamental needs of learners with ASD within the learning environment.

2.2 THEORETICAL FRAMEWORK

Bronfenbrenner's Bioecological Model (Bronfenbrenner, 1979) was used as the main theory to inform this study, drawing on his ecosystemic stance along with concepts of Autism Spectrum Disorder.

The research incorporated supporting theories, such as Developmental Theory of Autism and Theory of Mind (1995).

2.2.1 An Ecosystemic View on Autism Spectrum Disorder

The Bioecological Systems Theory explains the dynamics of the school environment. Thus, understanding the influence of the school environment dynamics on learners with ASD is important. According to this theory, a child develops within interacting contexts which exert bidirectional impacts on the child's life (Fabrizi, 2015). These contexts are referred to as levels of environmental influences. These levels include the Microsystem, Mesosystem, Exosystem, and Chronosystem, as previously discussed in Chapter 1 (1.7.1). The primary level is the Microsystem, which is the inner circle and direct environment where face-to-face, direct social interactions take place between the child and the individuals that the child interacts with most often.

The Mesosystem is the second inner level of cross-relationships and interactions between these small settings within the Microsystem. It includes the family, peers and most importantly in this study, the school. This relates to the interaction between child and teacher. The Exosystem is the third level and involves the broader community, where the child is influenced by the interactions but does not function directly or play an active role. In this study, this Exosystem refers specifically to the interaction between teachers and the schooling system at large. The Macrosystem is the outermost level and includes socio-economic status, cultural norms, morals, customs and societal conditions. The Chronosystem is the dimension of time that reflects the transitions and shifts in the child's lifespan and timing of events within their environment. The dimension of time plays an important role in influencing the development of the child over the schooling years (Sincero, 2013).

2.2.1.1 Autism and the Mesosystem

It is important for this study to focus on the Mesosystemic level of the Bioecological Systems Model where relations between teacher, learner and the environment of the school setting are scrutinised. This is important as learners spend most of their five-day weeks at school or in an education environment where interactions between teachers, children and the child's peers occur.

Individuals with ASD experience the world very differently to others. For example, they focus on details of their surrounding environment rather than a global perspective. This overload of detail surrounding them leads to anxiety and stress due to the unpredictable and unfamiliar nature of these stimuli (Green, 2015). Smaller spaces with fewer details and quality lighting are important, according to Green (2015). He explains that some individuals with ASD display hyper-receptivity and noise causes them to feel disorientated. When considering learners with ASD, these are important aspects to be made aware of within the school environment and the classroom setting.

As discussed by Saggars (2016), every individual with Autism Spectrum Disorder is unique and has unique needs. The classroom is a social environment, which relies on the ability of learners to interact, socialise and communicate effectively. All of these are aspects, which ASD learners struggle with. Research shows the importance of understanding the link between academic learning and social and emotion competence. A lack of these aspects could lead to a decrease in student's connection

with the school and deteriorating academic performance. Saggars (2016) also discusses how the required focus on curriculum often overshadows mental health and social and emotional learning. Considering that learners with ASD require curricular adaptations and accommodations, as discussed in Chapter 1 (1.1.1), this overshadowing is detrimental to their academic, social and emotional development.

To support the relationship between the individual and the classroom learning environment one needs to be aware of the importance of routine for a learner with ASD. According to Family Health Guide (2018), this need for routine is partly due to their rigid personality. A learner with ASD needs to know where they are in time and space. They require predictable situations. In order to learn efficiently in class, these learners require a supportive classroom environment where expectations are not lowered but are different. Differentiating expectations rather than lowering them is what inclusive education aims to achieve, as discussed in Chapter 1 (1.1.1). This includes simple and clear tasks set out by the teacher, keeping language literal and having visual timetables for routine, as well as a quiet area when the class becomes too noisy or overstimulating (Emma, 2018).

Weber (2013) speaks of the importance of consistency and predictability. It is evident that learners with ASD require routine in their daily lives, an important aspect to consider in the classroom. Weber (2013) also discusses the importance of visual aids within the classroom to reduce confusion and ensure predictability, reduce stress and help the learner with ASD move from the abstract to the concrete.

It is evident that learners with ASD experience their day-to-day learning very differently from the other learners in their classes, thus it is essential to be able to identify these learners in order to make the necessary accommodations and provide the necessary support, drawing on a social constructionist view of disabilities.

2.2.1.2 Social Constructionist View on Disability

In order to understand a social constructionist view on disability, one needs to first understand the concept of social justice. As cited in McMahon and Watson (2010), “*social justice defines actions that contribute towards affording equal access to all within a particular nation or society*” (O’Brien, 2001). Social justice has to be understood contextually as the issues at hand are dependent on the context of the

community. This is supported by Bronfenbrenner's Bioecological Systems Theory (1979), which suggests that all systems around the individual interact and thus have a direct or indirect impact on the learner (Leonard, 2011). According to Landsberg (2005), creating schools that are grounded in democratic principles and constructs of social justice should be the logical response to the rapidly evolving social, political and economic contexts. He also explains how social justice aims to use human resources to the mutual benefit of all learners, even those with disorders like ASD. Thus, this notion supports equal educational opportunities for all learners including those who experience barriers to learning.

Vygotsky (1978) proposed that learners with disabilities, or barriers to learning, should be viewed as having developed differently, rather than being less developed than other peers their age (Dovey, 2016, p.22). It is important to note that these learners interact differently within the Mesosystem to that of the 'neurotypical' learner. It is evident that learners with disorders such as ASD do not conform to the norm and find participation in learning activities difficult without specific support structures (refer to Chapter 1 (1.1.1)). As these learners require different interventions and accommodations, Vygotsky's view on disability (1978) explores the need for adaptation in the way scaffolding is provided for these learners. He explores the importance of teachers being flexible in teaching curricula to address the diverse needs of learners with disorder like ASD.

Vygotsky refers to the gap between the level of potential development that a child can reach with the help and guidance of a more knowledgeable individual and the level at which they currently function, as the Zone of Proximal Development (ZPD) (Hurst, 2018). Scaffolding refers to the assistance that is provided by that more knowledgeable individual to reach the ZPD. In the classroom, the teacher provides scaffolding for the learners through intervention and support. However, a learner with ASD requires a uniquely adapted type of intervention and support by the teacher in this scaffolding process.

Effective teaching of learners with ASD first requires the teacher's understanding of the learner's socio-cultural context. This context includes the learner's individual and collective cultural identity, the contextual sites where they interact with the environment and individuals in their environment, and their identity and relationship to their social world, which is shaped by their community discourses (Alfred, 2002). As

discussed by Alfred (2002), these socio-cultural contexts are important aspects for the teacher to take into consideration in order to achieve the successful educating of learners (see Chapter 1 (1.7.2)).

Secondly, effective teaching of learners with ASD requires the teacher's understanding and knowledge of Autism in order to address these barriers to participation (Attwood, 2011, as cited in Dovey, 2016). In order to provide these learners with the support and scaffolding on a Mesosystemic level, the teacher needs to focus on the strengths of the individual with ASD, rather than their deficits, through curricular adaptation. Therefore, teachers need to be flexible in their teaching methods in order to address the diverse needs of learners with ASD as all learners have the right to equality and equity in education.

2.2.2 A Developmental Theory of Autism

According to Whitman (2004), the Developmental Theory of Autism is a multivariate theory that is based on a number of factors and helps to understand Autism in its diverse manifestations. The theory of Autism is influenced by the lifespan conceptualisation of human development, which is a lifelong process. The development of an individual continues to occur in multiple domains, namely cognitive, social, physical, and emotional. Development within all these domains is influenced by biological factors interacting with social-learning processes. These include Bronfenbrenner's Microsystemic level.

These domains are viewed as having plasticity, which is defined as positive or negative lasting alterations due to a specific input or situation during development (Nettle & Bateson, 2015). Plasticity in the development also relates to Bronfenbrenner's Chronosystem, which reflects the lifespan and timing of events in the environment of the individual. ASD can develop over the lifespan of an individual and can be identified at any stage of life. However, ASD is predominantly identified in the earlier years of an individual's life, rather than in adulthood, as explored in Chapter 1 (1.1). Therefore, this study focuses on a certain life-stage where ASD is commonly identified and diagnosed.

The Chronosystem is in a constant state of reorganisation. This Developmental Theory of Autism allows for the possibility that specific processes and changing systems may

play a role in the development of different symptom patterns on the Autism Spectrum Disorder and may explain individual differences in people with ASD.

The way in which individuals control their emotions, cognition and behaviours is influenced by their ability to self-regulate. People with Autism find it difficult to self-regulate. Remembering that the teacher is part of the Mesosystemic level and seeing that these learners cannot self-regulate, it is important for the teacher to be able to assist the learner in doing so.

According to Haimour and Obaidat (2013), emphasis is placed on teacher skills and training to ensure that school teachers are adequately prepared and possess requisite knowledge and skill to identify the need to screen for ASD within the classroom environment. Teachers should note how learners with ASD react to the environment in extremes, either with high or fluctuating intensities, displaying great anxiety, fear, panic or 'abnormal' reactions due to their inability to self-regulate. These reactions serve as key warning signals or 'red flags' for the teachers to identify and respond to. According to the DSM-5 (2013), some common red flags of ASD include:

- Impairments in reciprocal social communication and social interaction;
- Restricted, repetitive patterns of behaviour, interest or activities;
- Lack of non-verbal communication and eye contact;
- Lack of verbal communication;
- Lack of relationships, play and object exploration;
- Being easily upset by routine change;
- Sensory sensitivities;
- Self-stimulatory behaviours like hand flapping or rocking.

As explained by Haimour and Obaidat (2013), for teachers to take the necessary action, they need to be familiar with all aspects of ASD. *"Knowledge held by teachers is information that creates change"* (p.45). For teachers to be able to notice these atypical behaviours and characteristics, they need to be familiar with the developmental theories and milestones of the 'neurotypical' learner within the specific age group that they teach. Milestones allow parents and teachers to monitor a child's learning and behaviour and track healthy development from as early as four months (Autism Speaks, n.d.). Learners with ASD will not meet all the expected developmental

milestones within the expected timeframes. As discussed by Rodriguez (2010), parents and caregivers are most likely to spot warning symptoms of ASD through tracking their baby's basic initial developmental milestones, which are prevalent before the age of three years.

As the 'typical' child advances from infancy and approaches three years of age, their physical growth and motor development will slow down while their intellectual, social and emotional abilities will change tremendously (American Academy of Pediatrics, 2019). Intellectual milestones include fantasy play and sorting shape and colour. Social skills milestones include imitating the behaviour of others, being aware of themselves as separate from others and being enthusiastic about being in the company of other children. Physical milestones include walking alone while pulling toys behind them, standing on tiptoe and beginning to run (American Academy of Pediatrics, 2019). According to the founder of Reach Autism, specific milestones that children with ASD do not meet include anticipation during pause in play, incidental learning of their surrounding environment (such as being able to identify a light without being taught it's a light), responding to their name when not followed by an instruction or demand, and nonverbal communication (like pointing to something) (Buckle, 2019). This age stage is the prime time to identify concern for signs of ASD.

Teachers also hold responsibility for the identification of learning acquisition milestones, which take place in the early school-going years. With the knowledge of these basic developmental milestones and the knowledge of red flags of ASD, teachers are able to identify a need for concern based on the milestones of a 'neurotypical' child.

2.2.3 Theory of Mind

Bowen (2008) explains how 'Theory of Mind' is a term developed by Simon Baron-Cohen in 1995 and is used to describe the cognitive processes involving one's ability to recognise and understand the thoughts, beliefs and desires of themselves and others, as well as the ability to predict what they, or others, will do next. Individuals with ASD find great difficulty in understanding and predicting the behaviour of others and their own behaviour in response to other people. This difficulty in predicting behaviour creates a barrier in socialisation and forming meaningful relationships.

According to Rastall (2016), learners with ASD often appear self-centred, uncaring or eccentric as they do not understand that classmates have their own thoughts and emotions; they find it difficult to understand that others have different perspectives. These learners find it difficult to reciprocate, express empathy and engage in fantasy play and take turns in conversation. This difficulty in fantasy or pretend play is linked to the limitation in effectively constructing a simulation of what may be happening in someone else's head; these learners cannot imagine a brain that is not their own or does not have the same information, motivations or feelings as theirs (Applied Behaviour Analysis Education, 2018). The difficulties experienced by learners with ASD are skills that the 'neurotypical' learner is capable of. The 'neurotypical' learner can understand the emotions, thoughts, desires and beliefs of themselves and others. They are able to express empathy, engage in fantasy play and take turns in conversations. Importantly, they are able to effectively construct a simulation of what may be happening in someone else's head.

When a learner does not demonstrate efficiency in these abilities, it offers clues about possible ASD symptoms. Therefore, in order for teachers to effectively screen for ASD, they need to be able to identify when learners experience difficulty in these abilities. This is picked up by the teacher during basic classroom observations and peer interactions. These difficulties experienced by learners with ASD also influence their thinking and therefore negatively affect their ability to benefit fully from the school curriculum (Bowen, 2008).

This is supported by research, which suggests that language aspects are important for development of theory of mind skills, which includes communication in social contexts, knowledge of words and concepts referring to mental states and complex grammar especially sentence structures used to express mental states (Tager-Flusberg, 2011). Learners with ASD sometimes lack the ability to develop language skills. These learners struggle to link descriptive words to mental states and struggle to communicate in social contexts.

Communication is important for inclusion within the classroom environment and it is an important task for teachers to achieve in order to accommodate these unique needs of learners with ASD. This notion of inclusivity links to the Department of Basic Education's (DBE) Screening, Identification, Assessment and Support Policy (SIAS),

(2014) which aims to provide programmes for all learners who require additional support (see Chapter 1 (1.6.3) for further explanation) . Some important concepts that make up Theory of Mind will now be explored to help place the learner with ASD into context.

2.2.3.1 Executive Functions

Executive function involves the cognitive process of self-regulating as well as controlling and managing thoughts and actions (Bennie, 2018). Two main areas of skills that emerge from this function relate to the skills that help one to choose and achieve goals; and the skills that help guide behaviour.

i. Skills that help choose and achieve goals:

- Planning
- Working memory
- Organisation and time management
- Problem solving
- Verbal reasoning
- Thinking about your own thinking

ii. Skills that help guide behaviour:

- Attention
- Inhibition
- Cognitive flexibility
- Initiation of actions and monitoring of actions
- Emotional control
- Persistence

Learners with ASD struggle to master these skills. This is often noticed more in the early to middle years of schooling as the curriculum becomes more demanding and complex and relies more on independent work. In order to assist and guide these learners through tasks, 'executive secretaries' (teachers and parents) are required to help remedy these difficulties (Bowen, 2008). These 'executive secretaries' are responsible for the appropriate interventions and support of learners with ASD to help them complete tasks. Therefore, it is essential for the teachers to be able to identify this need for assistance so that they can act as an 'executive secretary'.

2.2.3.2 Sensory Sensitivity

“Sensory processing is the ability to understand, gather, organise and use information that comes from our senses” (Chapparo, 2014, p.5). Sensory sensitivity refers to when an individual finds it difficult to process everyday sensory information because their senses (taste, touch, smell, hearing and sight) are hypersensitive or hyposensitive to the sensory input from the environment (Bowen, 2008). This sensory sensitivity is common to most individuals with ASD. These learners experience either under-sensitivity, over-sensitivity or both sensitivities at different times during the intake of sensory stimuli from the environment.

A learner with ASD who experiences under-sensitivity to environmental sensory stimuli often wears thick clothes when it is a hot day or repeatedly rubs their arms, legs or other body parts against objects around them. A learner with ASD who experiences over-sensitivity often covers their ears when they hear loud noises, may not like the feel of labels inside clothing or might only want to eat certain textures of food. The learners with ASD who experience both under-sensitivities and over-sensitivities either experience them in the same specific sense (such as smell) or in different senses (Richdale & Green, 2017).

Richdale and Green (2017), speaks of other outward signs of sensory sensitivities of learners with ASD. These learners may sniff objects they come across or complain about smells; may constantly need music playing or may prefer silence instead; may be unstable or very agile; may have a delayed response to injuries and pain or may overreact to it; and may move in a clumsy, poorly planned manner. These are just a few of the possible signs of sensory sensitivities.

Although, this sensitivity is not fully understood (Bowen, 2008), it is understandable that learners with this difficulty, such as learners with ASD, may find the school environment very overwhelming because of the sensory overload that they experience. Therefore, these sensory sensitivities are essential elements for teachers to identify in the classroom.

2.2.3.3 Sense of Self

Sense of self can be explained as the way a person views and thinks about their beliefs, their traits and their purpose within the world (Teasley, 2018). Jawer (2014) discusses how the way in which we process environmental and emotional stimuli has

a direct bearing on our sense of self, including, how we come across to others (personality) and how we conceptualise ourselves. The inability to model 'self' can disrupt an individual's ability to understand the world as a whole (Montague Jr., 2008). Jawer (2014) explains how individuals with ASD experience the world as "*a swirling mass of tiny details*", making it difficult for children with ASD to interpret sensations, especially when they are paired with another different sensation. This leaves these learners feeling overwhelmed as they find it easier to concentrate on one thing at a time.

In the classroom, learners with ASD may seem confused, dazed, irritable, antisocial or disengaged as they retreat inward to escape the sensory 'noise' and the unpredictable human interactions of their peers. These learners seem to be unable to reflect on experiences within the classroom and therefore base their participation on rote memory without internalising the experiences of group work or activities. This hampers their ability to transfer skills from one activity to another, which affects their executive functioning skills. Thus, additional support is required from teachers and peers to support these learners with ASD (Bowen, 2008).

2.2.3.4 Central Coherence Deficit

Central coherence can be briefly explained as the ability to understand one's context or to 'see the bigger picture' (Central Coherence and Autism, 2018). Individuals with ASD have a poor or weak central coherence. They perceive details better than the 'neurotypical' person as they focus on smaller details: they 'cannot see the wood for the trees'. This overly focused attention on detail often leads to missing the meaning of something, and the appreciation of the nature of a situation. Children with ASD in the classroom often fail to complete tasks due to their being too focused on one small detailed part of it.

These learners develop routines and systems to compensate for this difficulty. The teacher can provide assistance for these learners. Providing them with work that has less detail and less complex instructions would help them focus on the important elements of the task at hand. Allowing them to use visual stimuli aids when completing tasks would assist them in remembering steps and carrying out appropriate responses without missing vital information. Learners with ASD require structure and routine within the schooling environment, which is not always attainable (Bowen, 2008).

2.3 AUTISM SPECTRUM DISORDER (ASD)

2.3.1 Diagnostics Criteria and Classification of ASD

The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) (2013), has merged all Autism Disorders, Autism Disorder, Pervasive Development Disorder (PDD-NOS) and Asperger's Syndrome into one umbrella diagnosis. It uses specific diagnostic criteria to diagnose an individual with ASD. This consists of persistent deficits in social communication and social interactions; restricted or repetitive patterns of behaviour, interests or activities; and causes clinically significant impairments in social, occupational or other important areas of current functioning. It also specifies that symptoms should be persistent from early childhood and interfere with the individual's everyday life and functioning (Appendix J). The DSM-5 identifies risk factors which contribute to the development of ASD, including environmental, genetic and physical conditions (APA, 2013).

Certain physical and genetic factors increase the risk for a child to be diagnosed with ASD. This includes the child's gender as boys are five times more likely to develop ASD (Alspaugh-Jackson & Penrod, 2017). Family history in terms of relatives with ASD or parents with minor social or communication skill problems are also risk factors. Extremely premature babies born before 26 weeks of gestation and advanced parents' age during conception both pose as risk factors for the child developing ASD (Kolevzon, Gross, & Reichenberg, 2007).

Environmental risk factors include much more than just chemical exposure to the environment as it includes any influence beyond the inherited genes (Halladay, 2012). Although the aetiology of ASD remains ambiguous, investigations indicate that prenatal exposure to air pollution and interpregnancy intervals as well as advanced parental age and preterm birth, and gene-by-environment interaction are potential risk factors for developing ASD (Lyall, et al., 2017, p.92). It is evident that genetic, physical and environmental conditions overlap when considering the contributing risk factors of an individual developing ASD.

2.3.2 Nature vs Nurture

Nature versus nurture as the cause, or the aetiology, of ASD draws on environmental, genetic and physical conditions as contributing factors. In the past, mothers were

branded “*refrigerator mothers*”, alluding to the alleged coldness towards their children, which resulted in the development of Autism Spectrum Disorder (SDDS, 2016).

Over the years, there has been a pendulum swing of opinion around the aetiology of ASD as it swings between *nature* and *nurture*. *Nature* suggested it was caused by specific genetic abnormalities or physical factors, which has been previously discussed. *Nurture* suggested that is stemmed from an environmental factor or condition such as chemical exposure, or a lack of maternal warmth (Strathearn, 2009).

Many studies in the past have been focused on children rather than adults. The disadvantage of this is that many individuals with ASD used compensation, and implemented ‘camouflage strategies’ in coping throughout their childhood and schooling years (SDDS, 2016). It is often seen where children, especially girls, use coping mechanisms such as copying the actions of a ‘neurotypical’ peer, where they learn social rules like a protocol (SDDS, 2016). These individuals were only diagnosed later on in life, making it difficult to predict whether development is based on nature or nurture.

Evidence suggests that both genetic variation and experience may contribute to the development of ASD; both nature and nurture may contribute to the aetiology of ASD (Geschwind, 2008). Thus, a combination of environmental, genetic and physical factors is evident in the development of ASD.

2.3.3 Prevalence of ASD

A new estimate for 2018 represents a 15 percent increase in the prevalence of ASD nationally across the United States of America (Autism, 2018). The incidence of ASD has grown to one in 59 children, with the gender gap decreasing due to improvements in identifying ASD in girls (Autism, 2018). The Star Academy, however, reports prevalence of ASD at the end of 2017 to be one in 36 American children (Star Academy, 2018). Research also reflects that most children are only being diagnosed after the age of four, although ASD can be reliably diagnosed as early as two years. Thus, early diagnosis and intervention is a current issue faced in the U.S. An estimated one in 40 parents in America have reported having a child with ASD (Autism Speaks, 2018).

Although only 10 percent of people with ASD are correctly diagnosed in South Africa, the prevalence of ASD in South Africa is estimated to be around one million people,

based upon global statistics, with the diagnosis increasing each year. This could be due to increased awareness of the disorder (Jeynes, Piotie, & Skosana, 2018). Due to healthcare workers in South Africa being more focused on communicable diseases such as HIV, tuberculosis and malaria, little research and focus has been placed on ASD.

De Vries (2017) reminds us that “*to diagnose Autism Spectrum Disorder in a particular culture, we need to be familiar with what behaviours are acceptable and unacceptable in that culture*” (as cited in Boonzaier, 2017). Apart from being sensitive to the diversity of learners in terms of socio-cultural contexts of culture, context and discourse, as discussed by Alfred (2002) (see discussion in Chapter 1 (1.7.1)), one also needs to consider language diversity. With the diversity of languages amongst the South African population and the lack of efficient standardised screening and diagnostic tools available, it is a challenge to translate these few diagnostic tools and appropriately adapt them for the diverse South African population.

2.3.4 ASD and Education

According to Mubaiwa (2008), South African children with ASD and their families face challenges related to diagnosis and management. There is little provision of special need services in formal education and insufficient resources, which leads to the children not receiving the education they need (van Biljon, Kritzing, & Geertsema, 2015). As discussed in Chapter 1 (1.1), ASD has become more apparent in the young school-going child due to late diagnosis of the disorder. Once diagnosed with ASD, there is a certain, short biological time window for the intervention and development of certain abilities, such as language development. This stresses the crucial need for early interventions within the school environment (Bottcher & Dammeyer, 2016). It is therefore important to consider the foundation phase years of a child's schooling career in the identification of this disorder so that they can receive the interventions and support that they require from the school and teachers.

South Africa, unlike other countries, does not have a specialised curriculum or education programme for learners with ASD, which increases challenges faced by teachers to identify these learners and accommodate them too. Thus, it is vital for teachers to be made aware of ASD and for them to have the training and knowledge in the appropriate practice of screening for this disorder. Lack of understanding of ASD

and Autism-specific behaviours of these learners leads to their being misplaced or excluded from school (Human Right Watch, 2015). Although increased knowledge on both ASD and inclusive practice is evident over the past few years, teachers still need to be able to develop skills in the effective inclusivity of learners with ASD (Kempthorne, 2018).

2.4 INCLUSIVE EDUCATION

Inclusive education is seen to have not only one single definition; it is a complex multifaceted concept which requires social justice. Social justice in inclusive education means affording equal access to education to all learners. Inclusive education is generally understood as part of a human rights agenda that demands access to, and equity in, education (Florian, 2008). This means that learners with barriers to learning or disabilities, such as learners with Autism Spectrum Disorder, have the right to mainstream education with suitable support measures.

Soudien and Sayed (2003), discuss inclusion from a social justice viewpoint. They explain how the notion of inclusion operates on the concept of 'normalisation' of learners and thus leads to the 'othering' of learners who do not fit this 'ideal' form. By 'othering' these learners it is suggested that they lack certain abilities, because they need to be targeted for special inclusive measures such as specialised schooling environments. These learners are then excluded from the 'normalised' learners in a mainstream school. It is therefore arguable that learners with ASD should be allowed to attend mainstream schooling with the appropriate interventions and support required. However, inclusive education does not guarantee unproblematic integration of learners (Soudien & Sayed, 2003).

Although the teacher requires support in doing so, the integration of these learners is predominantly the responsibility of the teacher. Effective inclusion and integration of the learner depends upon the type of support and interventions that the teacher implements within the mainstream classroom.

As stated in the Bill of Rights (Constitution of the Republic of South Africa, Act no. 108, 1996), every person has the right to basic education and equity within that education. According to Irvine and Lynch (2009), there are several essential elements of inclusion, including leadership, collaboration, support for staff and students, effective

parental involvement, refocused use of assessment, appropriate funding, curricular adaptation and effective instructional practices. Elements such as leadership, collaboration, refocused use of assessment and curricular adaptation are also supported by the Screening, Identification, Assessment and Support (SIAS) policy document of 2014. This policy is designed to manage and support the process of teaching and learning which affects learners within the system who experience barriers to learning.

2.4.1 Screening, Identification, Assessment and Support Policy (SIAS) (2014)

The SIAS policy aims to promote maximum participation by standardising the systemic support of all learners (Department of Education, 2014). This process provides the most effective support plan for learners with Neurodevelopmental Disorders (NDDs) such as ASD in terms of identification and accommodation. Matshediso (2016), explains the purpose of this policy to give access to basic education regardless of the learner's abilities and circumstances, and to ensure access to inclusive quality primary and secondary education. The teacher's role in the SIAS policy is to firstly screen the learner in the beginning of each phase or term to identify if intervention and support is required and then to compile a learner profile. The teacher is then to become case manager while being guided by the SIAS forms. The first form is the SNA 1 (Support Needs Analysis 1) where the teacher, in collaboration with parents/caregiver, captures information regarding the learner's areas of concern, strengths and needs, action plan going forward and the unique required support of the learner (Department of Basic Education, 2014). Matshediso (2016) goes on to explain:

The department also feels that the majority of teachers still need to know more about teaching learners with disabilities. Measures have been put in place to ensure that significant progress has been made in ensuring that teachers receive training in specialised areas such as braille, South African Sign Language (SASL) and Autism (p.1).

Although this policy is stipulated by the Department of Basic Education (DBE), as stated in Chapter 1 (1.2), it can be assumed that this process is not always followed by all schools due to lack of training in the identification and support of these learners (Swart et al., 2002). Some schools adopt their own policy on the identification of learners with barriers to learning. It can be assumed that when schools adopt their own policy, it may not be effective or there may be less training and understanding of

what needs to be done. This then allows room for insufficient and ineffective identification and support of learners with barriers to learning.

2.5 TEACHER SUPPORT FOR ASD

Previous research has found that teachers face challenges in creating an inclusive environment for learners with ASD due to difficulty in management of behaviour, supporting communication and social skills development, engaging learners in lessons and the lack of appropriate teaching resources and curricular adaptations (Dovey, 2016). Lindsay, Proulx, Thomson, and Scott (2013, p.102), state that *“teachers’ lack of knowledge of Autism and a lack of Autism-specific teacher professional development are further challenges”*, and thus teachers’ career development reflects need for professional development to equip them with the ability to support and fulfil educational requirements of learners with ASD (as cited in Dovey, 2016).

More and more learners on the Autism spectrum are educated in inclusive mainstream settings worldwide (Humphrey, 2008). Because of unique neuropsychological and social difficulties that these learners face, it appears that they require unique support and skills in the classroom (Bowen, 2008). Thus, teacher support is also required on a social level and not only on an academic or cognitive level. As discussed by Goodman and Williams (2007), when students with disabilities are placed in restrictive environments, they interact more with teachers than they do with their peers, which could hamper their crucial social development skills. This means that teachers need the skills to be able to facilitate social interactions between learners with ASD and their peers. The need for these unique forms of support by the teacher has also been discussed in Chapter 1 (1.1.1).

Teachers need to be aware of the need for intervention and support of these learners so that they can implement environmental and curricular adaptation. This is where the implementation of the essential elements of inclusion, (referred to in Chapter 2 (2.4)), leadership, support for students, curricular adaptation and effective instructional practices is important.

As teachers are required to provide this support for learners with ASD, it is vital for them to have the knowledge of the red flags of ASD. It is also important for teachers to have the ability to carry out appropriate screening for disorders such as ASD so that they are aware of the need to accommodate and support these learners.

2.5.1 Teacher Knowledge and Practice

The term 'knowledge' does not have a single clear definition but is often explained as a justified true belief (Bolisani & Bratianu, 2018). York (2014) discusses how teachers not only require knowledge of content taught, but also require knowledge in the unique skills and traits that each learner brings into the classroom in order to use effective means of instruction and teaching for the needs of the individual. Burgess (2006) discusses the significance of using the most useful form of representations of ideas to make them comprehensible to all learners. For example, a representation of an idea may include the use of visual aids or can be accompanied by concrete apparatus. To achieve the comprehensibility of representations and instruction, school districts use programs to enhance teacher knowledge of their students, such as Knowledge of Individual Students' Skills (KISS). KISS allows teachers to effectively target instruction toward learners' unique learning needs, for instance the instructional and representational needs of a learner with ASD. It is important to acknowledge that there are existing programs and technologies that aim at enhancing teacher knowledge of students but are not always accessible within the South African context.

It is essential for teachers to have knowledge of their learners in order to deliver instruction and to communicate effectively to include learners with barriers to learning. Having this sort of knowledge of learners allows for equity and equality within the education system that has been a recurring point made throughout this study. Equity in the education of learners with ASD is enhanced when teachers can adapt their delivery of instruction and communication to allow them to be successful.

Apart from knowing their students in order to adapt instruction and communication delivery, teachers also need to have certain kinds of knowledge at different levels. There are three different types of knowledge that need to be considered in this research: procedural knowledge, declarative knowledge and conditional knowledge.

- a. Declarative knowledge is knowledge 'about' something and is referred to as the '*what*' (Sugiharto, Corebima, Susilo, & Ibrohim, 2018). Teachers' declarative knowledge in relation to ASD, refers to their knowledge of the specific factors of the disorder that will influence the learning process of the individual, the knowledge of how learners with ASD learn and the general knowledge and understandings that they, as teachers, have on ASD.

This type of knowledge equips the teacher with the ability to identify the red flags of ASD and helps them to know what appropriate action is required of them.

- b. Procedural knowledge concerns successful methods used to achieve learning goals and is referred to as the **'how'** (Sugiharto, Corebima, Susilo, & Ibrohim, 2018). Therefore, it is using one's declarative knowledge of the various problems faced within the learning environment and assigning or implementing an appropriate task or exercise accordingly.

Teachers' procedural knowledge of addressing ASD refers to the action they take in addressing the identification of red flags based upon the declarative knowledge they have regarding ASD. In order to move from knowing *what* to do, to knowing *how* to do it, one needs to consider conditional knowledge, which is referred to as the **'when and why'**.

- c. Conditional knowledge is the knowledge related to external conditions when selecting effective strategies or procedures. This knowledge refers to *"understanding how and when to use something we already know"* (Sugiharto, Corebima, Susilo, & Ibrohim, 2018, p.4). This conditional knowledge creates the link between declarative knowledge and procedural knowledge when dealing with ASD as teachers need to consider the environmental/Mesosystemic and other related factors of the learner in order to make a decision on *when* to use the appropriate procedural action and *why*. This study focuses on the specific procedural action of appropriate screening.

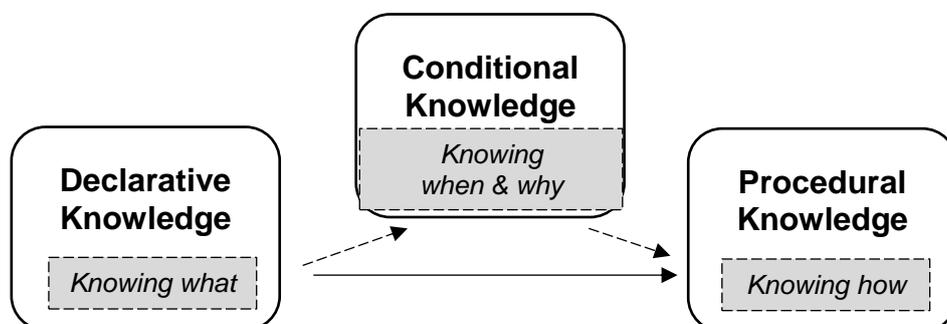


Figure 2.1 Three types of knowledge (figure created by the researcher).

2.5.2 Appropriate Screening

As defined by Bridgemohan (2019), screening refers to identifying any unsuspected deviations from normal patterns of development by using brief, formal evaluations which are standardised. A screening tool does not provide a diagnosis but helps determine whether additional investigation by clinicians with professional training is necessary. Early detection allows for children with suspected potential for ASD to be evaluated by professionals. Additionally, early detection enables them to receive the required treatment at the earliest possible opportunity. To increase the reliability of generated test results, it is important to use established screening tools or instruments as this also maximises time (Nadel & Poss, 2007, p.408).

There are three tiers of screening discussed by Bridgemohan (2018). First-tier screening is used to identify individuals at risk of ASD, while second-tier screening is used to discriminate ASD from other Neurodevelopmental Disorders. Second-tier screenings are more time consuming and elaborate.

A teacher would be expected to work within the first-tier screening process of identifying learners who may be at risk within their classroom. The process followed by teachers during the first-tier screening process includes the compilation of the learner profile and the completion of the SNA 1 form of the SIAS policy (as discussed in Chapter 2 (2.4.1). Collaboration with the learner's parents or caregiver during this process is important.

A study done on the screening accuracy of Autism Spectrum Disorder rating scales by Norris and Lecavalier (2010), showed that these basic first-tier screenings completed by teachers or caregivers for learners above the age of three are found to be effective in detecting at risk individuals. The Social Communication Questionnaire (SCQ) proved to yield accurate results where the Social Responsiveness Scale (SRS) and the Autism Spectrum Screening Questionnaire (ASSQ) both showed promise. These are just some examples of the screening tools used.

After completing the process of first-tier screening, it is then the job of the referred professional in collaboration with the School Based Support Team (SBST) to engage in second-tier screening. These professionals are equipped with the training and expertise to determine the nature of the developmental concern at hand. The process followed for second-tier screening includes the completion of the SNA 2 (Support

Needs Analysis 2) form of the SIAS policy (Department of Basic Education, 2014). This form involves reviewing the teacher's SNA 1 form and what interventions were implemented. An action plan and a support plan is then devised between professionals and SBST with a date set to review progress. It is essential for teachers to be able to perform this basic first-tier screening appropriately and accurately as it guides the second-tier screening process (p.24-26).

2.6 CHAPTER SUMMARY

This review of the literature has provided an overview of the important aspects of previous research and literature to support the focus of this study. The main theory, as well as the supporting theories that inform this study, have been discussed, followed by some pertinent themes of ASD, inclusive education and appropriate screening practices. The importance of teacher knowledge and practice in supporting the educational needs of learners with ASD within a South African context has been highlighted. Chapter 3 provides a detailed design of this research project based upon the aims and objectives of this study.



CHAPTER 3:

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

According to Trochim (2002), a research design is the 'glue' that holds the structure of the research study together (as cited in Diseko, 2005). The design of this study includes a discussion of research philosophies and approaches, as well as selection of participants, data collection and data analysis techniques that were used throughout. The end of this chapter will focus on trustworthiness in terms of reliability, validity/credibility and transferability, followed by an explanation of ethical considerations.

3.2 DESIGN AND METHODOLOGY

This study is largely exploratory as it attempted to explore new insights into the topic of teachers' knowledge and practice in appropriately screening for Autism Spectrum Disorder in a mainstream primary school. Secondly, this study is largely descriptive as it aimed to enhance understanding of various contexts in which the data was collected. A generic qualitative design was implemented with an interpretive research paradigm. Thus, an exploratory, descriptive study was conducted in order to determine the nature of the above stated problem to gain a better understanding, with no intention of offering final, conclusive evidence (Dudovskiy, 2018). The advantages of this exploratory approach include flexibility and adaptability of the study as well as laying the groundwork for future studies. This study will assist in directing future research on the topic.

3.2.1 Paradigm Informing the Study

Johnson and Christensen (2005) define a research paradigm as a perspective that is based on a set of shared assumptions, concepts, practices and values and, therefore, is the way in which the researcher thinks about the development of knowledge to help conduct the study. The research paradigm includes the research philosophies and method of the study.

As defined by Saunders (2016), a research philosophy is a system of beliefs and assumptions about the development of knowledge (p. 124). The dominant philosophy of the study is the interpretivist paradigm. According to Hudson and Ozanne (1988), interpretivists believe that reality is multiple and relative (as cited in Edirisingha, 2012). This philosophy assumes that access to reality is through social constructions such as language, shared meaning and instruments. In this study, interpretivism is based on the transactional or subjective epistemological belief that people cannot be separated from their knowledge. Therefore, this was a suitable approach to explore the teachers' knowledge of appropriate screening for ASD. To do so, the researcher used socially constructed interviews to gather data for the research.

Although this approach may yield weak prediction due to its subjective nature, knowledge in determining what some teachers may think and do, and how they deal with the prevalence of ASD is generated through meanings that the participants create. The researcher considered the aspect of relativity (Dudovskiy, 2011).

Statistical and mathematical techniques were not used in this qualitative study as the researcher wished to explore teachers' subjective experiences, knowledge and practice of appropriately screening for ASD as "*reality consists of people's subjective experiences of the external world*" (Thomas, 2010, p.295).

Therefore, this philosophy emphasises qualitative analysis and the use of naturalistic approaches of data collection, which are sentence completion, focus group interviews and physical artefacts. These approaches were implemented throughout this study in an inductive manner. The researcher remained subjective during the implementation in order to reflect the individual unique responses of participants.

3.2.2 Research Approach

As explained by Gabriel (2013), the inductive approach is typically a 'bottom-up approach' and is generally associated with qualitative research. This qualitative approach is concerned with the generation of new theory emerging from data, which is what this study aimed to achieve through exploring teacher knowledge and practice in appropriately screening for ASD in a mainstream primary school. The purpose of using this method was to condense raw data and establish clear links between the research objectives and the findings derived from the raw data.

In this study, a qualitative approach was followed where the researcher contrasted, compared, catalogued and classified the object of the study to make sense of a social phenomenon, while revealing holistic and informative insights to gain an understanding of underlying reasons, opinions and motivations (DeFranzo, 2011). Therefore, this study explored the meanings that individual teachers ascribe to this educational problem and helped create understanding for the researcher when exploring their experience with ASD.

3.2.3 Time Horizons

This study was conducted over a short period of time as it was limited to a specific time frame, thus adopting the cross-sectional time horizon. The Institute for Work and Health (2015) states that cross-sectional studies make comparisons at a single point in time. Therefore, this study focused on the data being gathered within this limited time space by way of focus group interviews, and sentence completion and collecting physical artefacts.

3.2.4 Methodology

According to Kothari (2004), research methodology refers to the logically considered steps and specific methods that are adopted by the researcher to systematically solve the research problem from a scientific viewpoint (p. 8). The researcher began by selecting participants and then collecting the data. The research methods of this study included focus group interviews, completion of sentences and the collection of physical artefacts as qualitative tools to collect the necessary data. Physical artefacts included any procedural documents, such as the procedural documents followed in the SIAS policy, used by the teachers or school, any specific tools used for screening for ASD, any website print-outs consulted by teachers for knowledge acquisition on ASD and any other documents deemed relevant to this study. As discussed by Nieuwenhuis (2016), the use of more than one tool was implemented in order to explore the phenomenon through a variety of lenses that will allow for multiple facets to be revealed and understood. It also allowed for triangulation of data.

These methodologies were carefully selected in line with the nature of this specific study through focusing on methods that gather, analyse and use collected data according to a selected philosophy (Myeko, 2014, p.75).

3.2.4.1 Participant Selection

Sampling is defined as the process of selecting a number of study units from a defined study population (Trochim, 2006). This research study implemented purposive sampling, which, according to Henning et al. (2004), is the use of participants who are chosen according to a relevant criteria that can help find the answers to the research question (as cited in Fester, 2006, p. 51). Therefore, the selection of participants was non-randomised.

A private school in Johannesburg was chosen for the collection of data for this study. Although this private school has chosen to follow the National Curriculum Statement (NCS) and thus adheres to the Curriculum Assessment Policy Statement (CAPS), the government does not fund it and it is therefore optional, not mandatory, for them to follow the SIAS policy. This school was chosen as the researcher was able to gain access into the school easily. Participants were selected from this private school.

The study implemented this non-randomised method when selecting Foundation Phase teachers (Grade 1 to 3) to participate in the research of teachers' knowledge and practice in appropriately screening for ASD. Although purposively selected, no participant was forced to take part in this study or engage in focus group interviews and sentence completion. Thus, they were included based upon willingness to participate in the research. The sampling method was chosen to enhance transferability of findings, and thus the trustworthiness of the study (Nieuwenhuis, 2016).

3.2.4.2 Data Collection

In order to gather information from various teachers, more than one method of data collection was used to allow for in-depth triangulation of data for this research study, which are detailed in the table below.

Table 3.1 Data collection methods used in the study

TYPE OF DATA COLLECTION METHOD	METHOD USED IN THE STUDY	Participants
Completion of sentences	All Foundation Phase (Grade 1-3) teachers in a controlled environment completed a completion of sentences exercise.	7
Focus Group Interviews	A semi- structured interview/discussion was conducted with three main groups of teachers. Three focus group interviews were conducted respectively, Grade 1-3.	7
Physical Artefacts	Physical artefacts were gathered across all grades to support the collection and analysis of data.	7

In order to explain the process of data collection, each method in the table will now be discussed in more detail.

(a) Completion of sentences

For the purpose of this study, the researcher chose to use a completion of sentences exercise as the starting point of data collection. This is a predefined series of sentences used to collect information from individuals and may be viewed as a type of survey (Survey Research and Questionnaires, 2016). The exercise included all Foundation Phase (Grade 1 to 3) teachers, three teachers in each grade. However, teachers were invited through voluntary participation. These participants were asked to complete a form consisting of sentence completion. A Google Form was used (see Appendix E). The Google Form is a free application that allows efficient distribution of personalised questionnaire, worksheets and other formats of information, to gather information and allows the researcher to view responses immediately (University of Wisconsin, 2016). This form consisted of incomplete sentences pertaining to the basic facts, definitions and knowledge teachers have of ASD and was administered to the three individual grade groups respectively.

Autism Spectrum Disorder (ASD)

Please complete the sentences by filling in what you deem to be the most appropriate answer.

PERSONAL EXPERIENCE WITH ASD

1. I have been teaching for _____ months/years.

Your answer _____

2. I have suspected ASD in _____ learners in the past.

Your answer _____

3. I have learned about Autism from _____.

Your answer _____

4. If I had reason to believe that I had a learner with ASD in my class, I would _____.

Your answer _____

Figure: 3.1 Google Form: example of some sentence completion questions

Teachers completed these forms under supervision of the researcher in an attempt to ensure greater validity of the data. The researcher was present in the room while participants completed the activity to avoid the copying of fellow participants and in the case where the structure of questions was unclear and needed further explanation by the researcher. Participants were required to complete the sentences according to what they believed to be the most suitable answer to help the researcher gain unbiased insight into key issues around ASD and the knowledge and practice in appropriately screening for it. Advantages of the sentence completion included the ease of construction for the researcher and that it does not demand academic level literacy skills in order for the participants to complete the sentences. (Appendix E).

Table 3.2: Sentence Completion Schedule

PARTICIPANT GROUPS	NATURE OF PARTICIPATION	SOURCE	TIME SLOT ALLOCATION (30min)	SPECIFIC LOCATION
All the Grade 1 Teachers (3 teachers)	Individual	Google Form Sentence Completion Worksheet	13:30pm- 14:00pm	School computer room.
All the Grade 2 Teachers (3 teachers)	Individual	Google Form Sentence Completion Worksheet	14:15pm- 14:45pm	School computer room.
All the Grade 3 Teachers (3 teachers)	Individual	Google Form Sentence Completion Worksheet	15:00pm- 15:30pm	School computer room.

After the preliminary collection of data and the preliminary analysis of the data from the sentence completion, the focus group interviews were then conducted.

(b) Focus Group Interviews

In addition to the sentence completion exercise used as the primary source of data collection, focus group interviews also took place. According to Nieuwenhuis (2016), a qualitative interview is a conversation where the interviewer asks the participants questions to collect data in order to see the world through their eyes and to facilitate a deeper understanding of each participant's unique knowledge base. There are different kinds of interviews in qualitative data collection. Some examples are personal interviews, telephonic interviews, Email or Web Page interviews and focus group interviews. These interviews are either structured (a set of standards, predetermined questions in a specific order), unstructured (no specific guidelines, restrictions or predetermined questions with few broad questions to allow open, informal and spontaneous discussion) or semi-structured (a set of predetermined questions to allow respondents to answer in their own words which is useful when collecting in-depth

information in a systematic manner from many participants) (Easwaramoorthy & Zarinpoush, 2006).

The researcher chose unstructured focus group interviews as the participants are colleagues and therefore represent a pre-existing group. Pre-existing groups have shared experiences, comfort and familiarity with each other, which facilitates discussion with greater ease (Gill, Stewart, Treasure, & Chadwick, 2008). Focus group interviews are a technique used to collect data from a group comprised of individuals with certain characteristics, and focus discussion on a certain given topic (Dilshad & Latif, 2013). Focus group interviews reveal levels of understanding that remain untapped by other forms of interviews as participants discuss topics and questions amongst themselves, which allows the researcher to gain different perspectives and richer data. An open-ended interview style, which is flexible, unstructured and conversational in nature with various questions that allows participants to give a free-form answer was adopted (Farrell, 2016). Thus, this method was necessary to allow the researcher to probe for explanations of responses offered by teachers to gain a deeper understanding in this open discussion forum.

Again, the researcher intended for the participants involved in the focus group interviews to include all Foundation Phase (Grade 1 to 3) teachers. These participants were grouped according to Grade 1, Grade 2 and Grade 3, keeping in mind that, although purposively selected, participation was not forced upon any teacher but remained voluntary.

The focus group interviews consisted of questions pertaining to the practice of screening and were framed to gain insight into what teachers do, and what tools and procedures teachers use, to screen for ASD. Interviews were used in this study to fit the subjective nature of the intended outcomes, making it an appropriate tool for this specific study as the researcher wished to explore the unique knowledge and practice of each participant. Please refer to Appendix D to view the schedule of the semi-structured interview.

5	<i>Use this opportunity to clarify or elaborate on findings in the questionnaire.</i>
Transition to the next topic: Now that we have spoken a bit about what ASD is, let us look at identifying the need to screen for this disorder in your classrooms.	
B. [Topic] Practice: Screening and identification of red flags.	
1	Have any of you ever dealt with a learner with suspected or professionally diagnosed ASD or any other learning disorder? (<i>elaborate: diagnosed by who; age and grade of learner; type of support and procedure followed; personal experience of dealing with such child as a teacher</i>)
2	Let's talk about learners who had not been diagnosed. How did you become aware and suspect that a learner in your classroom may be presenting ASD? (<i>elaborate: allow conversation direction to follow participants' responses- probe for more information. Incorporate the below questions into the conversation</i>)

Figure: 3.2 Focus group interview schedule section: example of interview questions

It is important to note that only one focus group interview with all intended participants from respective grades was conducted as opposed to the intended three separate interviews according to Foundation Phase grades. This was due to the interviews posing as a lengthy, time-consuming process during a busy term. Another reason for this accommodation was that the researcher received ethical clearance to conduct the study later than anticipated.

Table 3.3: Focus-Group Interview Schedule

PARTICIPANT GROUPS	NATURE OF PARTICIPATION	SOURCE	TIME ALLOCATION (45min)	SLOT
All the Grade 1 Teachers (3 teachers)	Group	Structured Interview	13:30pm- 14:15pm	
All the Grade 2 Teachers (3 teachers)	Group	Structured Interview	14:25pm- 15:10pm	
All the Grade 3 Teachers (3 teachers)	Group	Structured Interview	15:20pm- 16:05pm	

(c) Physical Artefacts

Physical artefacts gathered during the research process helped illuminate the research questions (Savenye & Robinson, 2001). This included any procedural documents, such as the procedural documents followed in the SIAS policy, used by the teachers or school, any specific tools used by teachers for screening for ASD, any websites consulted by teachers for knowledge acquisition on ASD and any other documents from the school which are relevant to this study. The researcher followed the four steps discussed by Savenye and Robinson (2001), of locating artefacts, identifying the material, analysing the artefacts and evaluating them. It was important for the researcher to gain insight into the subject of ASD as well as insight into the school setting before the collection of any documents to allow for easier identification of important and relevant artefacts. Therefore, the physical artefacts were collected after the focus group interview was conducted as it was during this interview that the researcher made the request for collection of any physical artefacts. Please refer to Appendix F1 and F2 to view physical artefacts.

3.2.5 Data Analysis

Data analysis is a stage in the process whereby a whole phenomenon is divided into components and then reassembled under various new topics (Diseko, 2005). Qualitative data analyses is the process of moving from the collected data to some form of explanation or interpretation in relation to what the study is investigating (Sunday, 2016). This process must occur alternately with data collection as it directs the sampling of data (p.51). As Nieuwenhuis (2016) explains, data collection and data analysis can be seen as a cyclical, iterative and ongoing process. Thus, this study incorporated these aspects as a cyclical process, which was guided by the criterion of the saturation of data through reflecting on data, identifying gaps in data and planning further data gathering. The researcher achieved this through reflecting on and identifying gaps in the data collected from the sentence completion. The researcher then adjusted the focus group interview schedule to gather this identified missing data. During the data collection process, the researcher constantly reflected on data gathered to ensure it was sufficient and relevant to the aim of the study in order to analyse it with accuracy.

A thematic Analysis was used for the analysis of data. According to Maguire and Delahunt (2017), and is used to analyse and present themes that relate to the data, was used in this study. This method of data analysis was suitable for this study as it allowed the researcher to interpret and make sense of themes that emerged in this study and it allowed the researcher to be flexible. Thematic Analysis was implemented in this study according to the six-step framework developed by Braun and Clarke (2006). See the in-depth data analysis protocol in Chapter 4 (4.3).

1. *Become familiar with the data.* The researcher became familiar with the data through personally engaging in the transcription of the interview as well as by engaging in constant reflection on data gathered throughout the process of data collection. Refer to Chapter 4 (Figure 4.1).
2. *Generate initial codes.* The researcher identified preliminary codes of meaningful data during the data analysis process.
3. *Search for themes.* The researcher analysed relationships between preliminary codes. Refer to Chapter 4 (Figure 4.2 and Figure 4.3).
4. *Review themes.* The researcher created a thematic map to identify relevant and irrelevant themes. The thematic map was in the form of a mind map, refer to Chapter 4 (Figure 4.4).
5. *Defining themes.* The researcher refined themes and subthemes of data.
6. *Write-up.* The researcher reported the themes with empirical evidence and compelling extracts to support the findings.

There are two levels of themes, the semantic level and the latent level, identified by Braun and Clarke (2006). In the study the initial focus of data analysis was placed on the semantic level where the researcher only looked at the words used by participants and what they meant from a linguistic viewpoint. The researcher then emphasised the latent level of analysis by attempting to examine and interpret the underlying conceptualisations, assumptions and ideologies that emerged from the data in order to explain and make sense of it.

3.3 QUALITY CRITERIA

Trustworthiness or 'rigour' of a study is an important aspect that ensures that the gap between data collection and data findings is as narrow as possible (Cohen et al., 2007). Rigour as a concept is an important goal concerned with external evaluators as

it aims to determine the worth of qualitative research (Morse, 2015). This study's rigour was maximised through ethical manner in which the research was conducted as well as the researcher's attempt to minimise subjective views and attitude bias throughout. Subdivisions of rigour were adopted in order to ensure the quality of research pertaining to this study. This included validity, reliability and transferability, which is in line with a qualitative study framework, as identified by Lincoln and Guba (1985).

3.3.1 Validity

Validity ensures that gathered data is true to what it appears to be in the study, and is thus rigorous (Robson, 2007). In order to ensure that this study is trustworthy, the researcher used descriptive validity, otherwise likened as *credibility*. Credibility implies that the researcher must not fabricate, affect or change any data during the gathering process for the benefit of the study. To ensure this, the researcher provided evidence of transcriptions to the focus-group interview, provided evidence of transcriptions of the answer forms of sentence completions to her supervisor, and attached them as appendices.

The researcher ensured credibility of the study through planning and preparation before conducting this research by carefully selecting participants who met the criteria as earlier discussed in Chapter 3 (3.2.4.1). The Foundation Phase participants were chosen to be part of this study as these early schooling years are vital in the identification of ASD (refer to Chapter 1 (1.1.1)).

Credibility refers to the congruency of the researcher's findings within reality as it is experienced by the research participants (Toma, 2006). Thus, credibility determines how certain the researcher is concerning the truth of the results. Credibility was ensured in this study as the researcher personally facilitated the sentence completion and focus-group interviews in a controlled environment where participants were monitored. Thus, the truth of the results in this study is considered credible.

3.3.2 Reliability

Reliability of a study ensures the confirmability of results in terms of their being accurate or constant and showing stable results, which could be reproduced under similar circumstances (Shields & Twycross, 2004). Confirmability is discussed as the degree to which results and findings of a study can be confirmed by other researchers

to ensure they are not based upon researcher bias, interest or motivation (Lincoln and Guba, 1985). Although this is a quantitative approach element, it is used in qualitative studies in order to allow for stable data and the assurance of rigour, as discussed by Cohen et al. (2003).

The confirmability of this study was maintained through the consistent, structured and unchanging nature of question formulation of the sentence completion Google Forms that were completed by each participant. The sentence completion was completed under the same conditions with the researcher present in the room.

The researcher collaboratively interpreted the focus-group interview, sentence completions and physical artefacts with her supervisor to avoid researcher bias. Possible researcher bias was also avoided using member checking by fellow peers in the Educational Psychology Masters programme. Member checking was also used to ensure that the researcher did not miss any important points of the findings.

The questions formulated for all data collection methods are specific to the aim of this research study and are systematically identified as vital to the study. The researcher incorporated the questions for a specific purpose. The credibility of these methods used to collect the relevant and intended data was guided by the use of the DMS-5 (2014) and other factual and diagnostic information published on Autism Spectrum Disorder.

3.3.3 Transferability

Transferability in a qualitative study refers to the extent to which the study can be transferred to other contexts in similar situations with similar research questions (Lincoln & Gube, 1985). In order to ensure transferability, participants and findings were described in detail. The researcher provided data collection schedules and sources as appendices. Appropriate theories were chosen to inform this study and will allow other researchers to judge the possibility of transferring the study to other contexts (Trochim, 2006).

3.4 ETHICAL CONSIDERATIONS

The following ethical measures were considerations in completing this study. This study was approved by the Gauteng Department of Education and received ethical

clearance to conduct the research in an education institution. University of Johannesburg ethical clearance number: 2019-100.

As researcher, and a student in Educational Psychology, I aimed to conduct the research in an ethical and professional manner. This was ensured through obtaining informed consent from the participants of the study (Appendix C). Consent from the school's principal was obtained as this verifies that they understand their right and that the participation is voluntary (Tracey, 2004) (Appendix B). As all participants were over the age of eighteen, no informed assent was necessary.

Confidentiality between researcher and participants was signed in accordance with their basic right to privacy, security and human dignity as stipulated in the Bill of Rights in the Constitution of the Republic of South Africa no. 108 (1996) (Appendix C). No harm was caused to any participants though the gathering of data.

The school was informed of the study. A letter indicating the conditions of research was provided by the University of Johannesburg and signed by the school (Appendix G).

3.5 CHAPTER SUMMARY

In order to answer the research questions posed, this chapter has further explained the qualitative research design of this study as well as the data collection tools used. This study was conducted against the backdrop of validity, reliability and transferability. Ethical considerations were discussed and explained. This was to ensure participants were treated in an ethical and just manner. Chapter 4 will provide the findings of this research.

CHAPTER 4:

DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

The aim of this study was to explore and describe teachers' knowledge and practice in appropriately screening for Autism Spectrum Disorder in a mainstream primary classroom in order to implement Autism-specific interventions. Chapter three gave a detailed discussion of the research design and methodology that this study followed. This chapter will now present and discuss the research findings.

4.2 CONTEXT FOR THE ANALYSIS

According to the discussion in chapter three (see 3.2.5 Participant Recruitment), participants were purposively chosen according to criteria relevant to this study in a non-randomised manner. The participants were teachers in the Foundation Phase who were chosen to represent the theoretical population because, as stated in Chapter 1 (1.1), the onset of Neurodevelopmental Disorders typically manifests in the younger pre-school years and becomes apparent in the young school-going child.

4.2.1 Data Collection

4.2.1.1 Sentence completion

Each participant completed sentences on a Google Form. These partial sentences pertained to basic facts, definitions, knowledge and personal experience that they may have on ASD (view this Google Form at <https://forms.gle/J4oYSGzWLxx3934aA> or see Appendix A). These forms were completed under the researcher's supervision in a specific timeslot set out for each group of teachers according to their grade (see 3.2.6). The researcher supervised this process by being present in the room where the Google Form was completed to prevent any sharing of answers between participants or use of the internet in completing the sentences. The researcher was also present to assist the teachers in answering questions, which may not have been clearly formulated or understood and needed further elaboration to ensure authentic data collection. This process aimed to contribute to ensuring validity in the collection of data for thematic analysis of this data to take place.

4.2.1.2 Focus group interview

A focus group interview was conducted where all selected teachers, irrespective of the grade they taught, were interviewed as one group. The purpose of this focus group interview was to gain insight into what teachers do and what tools and procedures they use to screen for ASD. The interview was audiotaped and transcribed by the researcher. Once the data had been transcribed, the researcher began the process of Thematic Analysis in order to identify the relevant and important information. After this analysis took place, it was also member checked by colleagues who assisted in the analysing of the data. Member checking is a technique for ensuring credibility of findings by asking external members, in this case colleagues, to check your data for accuracy and to determine if important information has been missed.

An open-ended interview style, which relied on an unstructured nature and a conversational manner, was used to ensure flexibility. (See Appendix B for interview schedule). Participants were able to talk in some depth as they chose their own words, which helped the researcher develop a better sense of their understanding of the topic.

As discussed in Chapter 3 (3.3.6), the advantage of using an open discussion forum is that it increased the validity of the data as the researcher had the opportunity to probe for explanations of responses in order to gain a deeper understanding of participants' experiences. It also allowed the researcher to ask for clarification of participants' answers. The researcher was able to collect different perspectives while still being able to steer the direction of the interview.

4.2.1.3 Physical artefacts

In addition to the sentence completion and focus group interview, data was also gathered from various physical artefacts. Physical artefacts included any procedural documents, such as the procedural documents followed in the SIAS policy, used by the teachers or school, any specific tools used for screening for ASD, any website print-outs consulted by teachers for knowledge acquisition on ASD and any other documents deemed relevant to this study.

According to Sunday (2016), analysis of data is the process of moving from the data that has been collected into some form of explanation, understanding or interpretation of what the study is investigating. The researcher chose to use Thematic Analysis to interpret and understand the data which was discussed in Chapter 3 (3.2.7). As this

study relied mostly on Thematic Analysis procedures, the themes were identified in this study through the process of systematically describing, illustrating, condensing and evaluating data that was gathered. Themes identified from the different data sets were constantly considered for possible correspondence with each other and further clarification.

4.3 ANALYSIS PROTOCOL

“Thematic analysis is the process of identifying patterns or themes within qualitative data” (Maguire & Delahunt, 2017, p.3352). Henning et al. (2005) explain how reading the data and dividing it into simpler, more meaningful units is the first step in analysing data.

The analysis process started with the sentence completion Google Form data as it had been collected first and was immediately accessible for analysis. Data collection and analysis is simultaneous in qualitative research (Paige, 2018). Subsequently, the focus group interview was analysed, keeping in mind findings that had already started to crystallise from the Google Form data, but with the challenge to still be open-minded to the data of the interview. Analysis of the physical artefacts was completed following the same procedure and process used to support and add to identifying themes or give a deeper understanding of teachers’ knowledge and practice in appropriately screening for Autism Spectrum Disorder.

The focus of this analysis was placed on the semantic level, where the researcher was not looking for anything beyond what the participant has said or written, simply the meanings of the words and phrases used in the analysis. The analysis also touched on the latent level, where underlying conceptualisations, assumptions and ideologies of the participants were interpreted through analysing their individual responses. For the data collected in this study to be made more meaningful and manageable, the following six-step framework, developed by Braun and Clarke (2006), was used to analyse the focus group interview, sentence completion and physical artefacts:

- 1. Become familiar with the data:* The researcher achieved this by engaging in the transcription of the focus-group interview and sentence completion. Transcriptions were firstly identified using descriptors for ease of reference during the analysis, for example, alphabetical letters such as ‘Q’, which referred to a specific participant (refer to table 4.1: Legend for analysis of data). This identifier was not used for the

sentence completion as the participants completed these anonymously. The researcher became familiar with the data by rereading the transcriptions for clearer understanding.

FOCUS-GROUP INTERVIEW

22/05/2019

- 1 **To start off I would like to ask if anyone would like to share what they think Autism**
- 2 **Spectrum Disorder is?**
- 3 Well, for me it has changed over the years because an autistic child sat and did this (shook
- 4 hands) and is in his own world with neurological issues or social issues. But now they put so
- 5 many things under the umbrella of Autism so those children who used to be Aspergers
- 6 children are now classified as Autistic children, and I think I had this discussion with you the
- 7 other day, I have a problem with that because as soon as you say that someone is Autistic
- 8 then some people imagine you as that (shakes hands). but there is different degrees.
- 9 T: Absolutely, and if you look at... well my understanding of Autism is that there is on the
- 10 very extreme ummm... if you look at the continuum of the whatever you call it, of the

Figure 4.1: Transcription of focus group interview

2. *Generate initial codes*: Through identifying preliminary codes of meaningful data, initial codes were generated as depicted in table 4.1: Legend for analysis of data. Legend identifiers were used throughout (see table 4.1). The transcription and each line of the transcription were individually numbered and each participant given an 'individualised' identifier. When a unit of meaning was identified, it was firstly allocated an individualised identifier derived from data set as well as the number of the line in which it was found. For example, *FGI: TQ, P1, L45* refers to *focus-group interview, participant Q, line number 45* where a specific respondent commented.

3. *Search for themes*: Analysing relationships between preliminary codes identified in the transcription allowed for the identification of themes. Each data set was analysed according to the predominant patterns in the data, which were identified and coded. After that, identified codes were categorised to form themes. The identification and refining of themes were not only identified across all participants as a group. Each participants' unique pattern of comments that they made throughout the interview was also identified and scrutinised.

	TRANSCRIPTION	PATTERNS/COMMENTS/QUESTION	CODE PATTERNS
1.	To start off I would like to ask if anyone would like to share what they think Autism Spectrum Disorder is?		
3.	G: Well, for me it has changed over the years because an autistic child sat and did this (shook hands) and is in his own world with neurological issues or social issues. But now they put so many things under the umbrella of Autism so those children who used to be Aspergers children are now classified as Autistic children, and I think I had this discussion with you the other day, I have a problem with that because as soon as you say that someone is Autistic then some people imagine you as that (shakes hands). but there is different degrees.	<ul style="list-style-type: none"> change- times have changed but still same stereotypic thoughts- old DSM criteria mentioned personal dislike/disapproval & struggle to accommodate change Basic knowledge 	<ul style="list-style-type: none"> resistance to change basic knowledge
9.	T: Absolutely, and if you look at... well my understanding of Autism is that there is on the very extreme ummm... if you look at the continuum of the whatever you call it, of the sensory integration dysfunctions, it is on the very very extreme and Aspergers is also on that spectrum. So those children that are Aspergers children who are not in control of their	<ul style="list-style-type: none"> basic knowledge- viewed as extremes knowledge from reading/hearing not from true understanding 	<ul style="list-style-type: none"> Basic knowledge self study for knowledge uncertainty

Figure 4.2: Transcription table of focus group interview to identify preliminary codes

QUESTION	ANSWER	TOTAL	PATTERN/CODE
1. I have been teaching for _____ months/years.	<ul style="list-style-type: none"> Almost 7 years 11 years 18 years 2 years 22 5 years 1 year 25 years 	1 1 1 1 1 1 1 1 1	<ul style="list-style-type: none"> range between 1- 25 average: 12 years 'old school teacher' and new generation
2. I have suspected ASD in _____ learners in the past.	<ul style="list-style-type: none"> 1 2 3 4 None A few times Yes 	1 1 1 1 1 1 1	<ul style="list-style-type: none"> everyone has suspected ASD expect for 1
3. I have learned about Autism from _____.	<ul style="list-style-type: none"> A school talk My own research A friend of mine who has a child with Autism. reading, internet and colleagues Courses I have been on. Reading I have done. Interaction with parents and children on the ASD spectrum my own reading 	1 1 1 1 1 1 1 1 1	<ul style="list-style-type: none"> own research, reading, few indirectly related workshops and own initiate as source of knowledge Not everyone has learnt about ASD

Figure 4.3: Transcription table of sentence completion Google Form to identify preliminary codes

4. *Review themes:* A thematic map was created to identify relevant and irrelevant themes. This was created in the form of a mind map containing preliminary codes (refer to Figure 4.1).

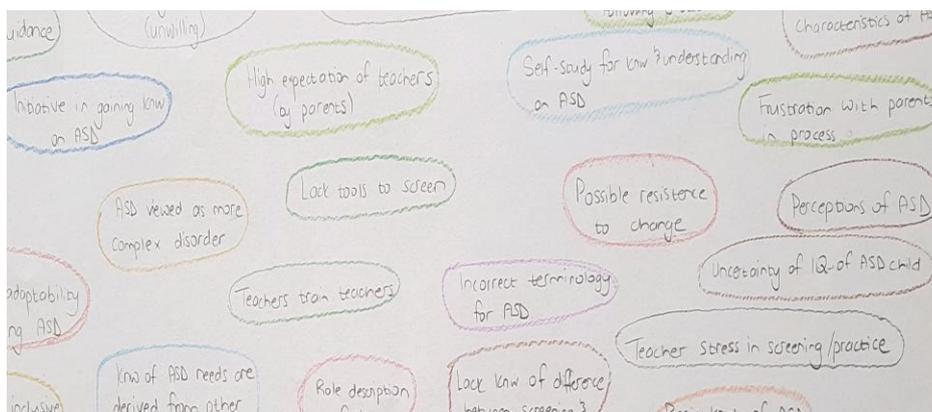


Figure 4.4: A section of a mind map of themes containing preliminary clusters of similar concepts circled in different colours to determine possible codes.

5. *Defining themes*: The refining of themes and subthemes of data from the sentence completion, focus group interview and physical artefacts allowed for the clustering of units of meaning (codes from the mind map) into categories. These categories were analysed in terms of conceptual meaning and were further clustered to form broad themes. This allowed thorough scrutiny of main, broad categories to be identified and overall themes to be generated from these. This was discussed in Chapter 3 (3.2.7).

6. *Write-up*: The researcher then engaged in reporting the generated themes with empirical evidence and compelling extracts to support the findings.

Table 4.1 presents the legend of analysis of data for easy reference in the discussion of identified themes. All data used to substantiate findings was labelled using this legend in the discussion of the findings.

Table 4.1: Legend for analysis of data

IDENTIFIERS		LEGENDS	
Focus-Group Interview		FGI	
Teacher G		TG	Paragraph number= P Line number= L
Teacher T		TT	
Teacher M		TM	
Teacher N		TN	
Teacher O		TO	
Teacher B		TB	
Teacher V		TV	
All Teachers		TA	
<i>Example: (FGI: TG, P2, L23) = focus-group interview, teacher G, page 2, line 23.</i>			

IDENTIFIERS	LEGENDS	
Sentence Completion	SC	Paragraph number = P
<i>Example: (SC: P3) = sentence completion, page 3.</i>		
Physical Artefacts	PhA	Artefact item number
<i>Example: (PhA: 1) = physical artefact, number 1</i>		

The significant categories and themes that emerged from the data analysis are discussed in Chapter 4 (4.4) below.

4.4 ORGANISATION OF FINDINGS

After the researcher had analysed the data using Thematic Analysis and subjected the analysis to scrutiny by peers and her supervisor, the categories and themes that had been identified were consolidated. A total of five main themes were identified, with 11 relevant sub-themes relating to the research questions, as stated in ‘1.4 Research Questions’ of Chapter 1, Collateral findings also emerged from the data analysis. These findings are reported on in this section.

Table 4.2: Summary of themes and sub-themes.

THEMES & SUB-THEMES
THEME 1: MANIFESTED AWARENESS OF ASD
Experiential learning
Stereotypical awareness
Distinct ambition
THEME 2: KNOWLEDGE AMBIGUITY
Misguided perceptions
Misrepresentation of ASD
Screening ambiguity
THEME 3: AFFECTIVE CAPABILITY
Overwhelming distress
Weight of parent expectations
THEME 4: INTER-COLLEGIAL RELIANCE

Internal collaboration and training
THEME 5: AVERSION TO CHANGE
Changing role of the teacher
Resistance to change
COLLATERAL FINDINGS
THEME 1: REPUTATIONAL CONSTRAINTS

4.5 THEMATIC EXPLORATION

Themes identified from the analysis are described below. Themes and related points of discussion are supported with verbatim data from all collected data sets to substantiate possible meanings and interpretations.

4.5.1 Theme 1: Manifested Awareness of Autism Spectrum Disorder (ASD)

Manifested awareness refers to one's crystallised knowledge/intelligence. This type of knowledge/intelligence is derived from previously learnt information or experiences in one's life and is drawn upon from one's long-term memory. Therefore, as one continues to learn and experience life, one's crystallised knowledge/intelligence continues to manifest, or to develop (Khan, 2019). Findings from the data analysis clearly indicated teachers' manifestation of awareness. This refers to development of knowledge, of ASD through their personal experiences of dealing with this disorder and any previously learnt information or facts that they have been exposed to. This notion of manifestation draws on David Kolb's theory (1984), which suggests that the learning process is guided by the individual, who learns through action and personal development (Gruber, 2015). In support of this theory, Gruber (2015), draws on the words of Confucius, "*I Hear and I forget. I see and I remember. I do and I understand*". This theme has been divided into three relevant sub-themes.

4.5.1.1 Experiential Learning

David Kolb's experiential learning theory of 1984 defines this type of learning as "*the process whereby knowledge is created through the transformation of experience. Knowledge results from the combinations of grasping and transforming the experience*". (Cherry, 2019). Therefore, this type of learning occurs through a repeated cyclical process of concrete experiences and abstract conceptualisation where an

individual reflects on such to create or develop new theories or ideas about the world they live in- which they then put to the test. Therefore, as defined by Kolb (1984, p.38), “*Learning is the process whereby knowledge is created through the transformation of experience*” (as cited in McLeod, 2013).

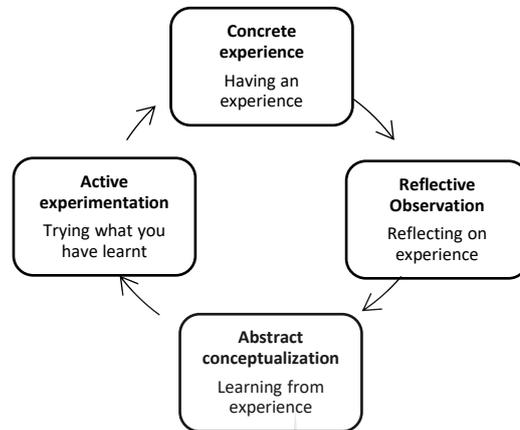


Figure 4.5: Kolb’s Experiential Learning Cycle

The data collected in this study revealed this form of knowledge acquisition whereby the insight that teachers have on ASD is dominantly gained through personal experience. Most of these encounters were based upon generalised experience in different contexts. Some of this personal experience occurred within family structures, “*Well I’ve got a host brother who had an Autistic child*” (FGI: TG, P2, L37). Some of the respondents seemed to have experienced this in adult learning contexts, “*I have experienced it in adults, not children*” (FGI: TO, P1, L18). However, most of this experience seemed to be within the schooling system, “*I saw it in a child in grade triple nought*” (FGI: TT, P2, L65). “*The one I had was obsessed with trains*” (FGI: TG, P3, L102). “*We did have a child in grade 2 last year*” (FGI: TO, P3, L108). “*I’ve got one in my class and he is unable to express his emotions*” (FGI: TO, P4, L133). “*We have maybe one or two here and there, it’s not a lot*” (GFI: TT, P12, L403-404). According to the Sentence Completion Google Form question, “*I have suspected ASD in _____ learners in the past*” (SC: P1), all teachers except for one have encountered or expected ASD in a learner, which formed their knowledge on ASD.

Undifferentiated knowledge: Undifferentiated implies something unclear or undistinguished. In this case it refers to the broad, non-specific and vague knowledge that teachers have on ASD. This seemed to appear in the description of aetiology, “It is a neurological *thing*” (FGI: TT, P1, L-14). Undifferentiated knowledge also appeared in the explanation of characteristics of ASD, “An autistic child sat and did this (shook hands) and is in his own world with neurological issues or social issues” (FGI: TG, P1, L3). “Yea, a neurological thing their behaviour, and their socialising” (FGI: TM, P1, P15). Another area where this knowledge is seen is in some participants’ descriptions of cognitive abilities of children with ASD, “They don’t have to be bright but they are often. Some Autistic children are not. They are impaired” (FGI: TG, P1, L32-33). “Baby starts to make eye contact with the parent and responding, a child who is severely Autistic would not be doing those things” (FGI: TM, P2, L66-67). As can be seen from earlier analysis, teachers depend upon their experiential learning in order to understand ASD. Relying only on experiential learning along with the lack of training on ASD plays a role in their undifferentiated knowledge.

Lack of training: When considering Kolb’s Experiential Learning Cycle phase of Reflective Observation, training allows for the practice and the reflection on the experience. This then allows for the development of differentiated knowledge. Some participants expressed a lack of training on ASD, “No we *not trained*” (FGI: TG, P6, L188). “It’s part of the job and the game that you *are not trained for*” (FGI: TV, P11, L 373). “It’s mind-blowing how many portfolios we have had to take on that we are NOT trained for” (FGI: TT, P17, L595). “Never... we were *never trained* to pick up these specific learning disorders.... or neuro-neurological disorders... *none of our training* as around that” (FGI: TT, P17, L600-601). From what the participants said, it appears that some of their learning comes from informal training. A physical artefact collected from a participant resembled a form from the Autistic Association of South Africa that listed red flags (PhA: 2). Incidental training was also identified. In one case, a participant learnt about a child’s situation from the information provided by the parents, “The *mothers told me* when I got them” (FGI: TG, P4, L127-128). “So there was a *written document* based upon what it was” (FGI: TS, P5, L139). When the researcher asked whether the participants believed that the school had adequately provided necessary training – specifically on the screening procedures of ASD—a participant responded, “Not in Autism” (FGI: TS, P21, L792).

It is evident that the teachers gained great amounts of their knowledge through experiential learning due to the lack of formal training received on ASD. In relation to Kolb's Experiential Learning Cycle, this means that teachers' learning predominantly falls within the phases of Concrete Experience, Abstract Conceptualization and Active Experimentation with little emphasis on Reflective Observation (see Figure 4.5). This results in the manifestation of undifferentiated awareness of disorders like ASD.

4.5.1.2 Stereotypical Awareness

A stereotype is an oversimplification of a characteristic imposed upon a specific group of people due to their race, gender, sexual orientation or any other identifying factors (Kareem, 2019). Stereotypes drive people's behaviour in both positive and negative ways. They hamper one's judgment and impacts on one's awareness. As discussed by Carstensen and Hartel (2006), stereotypes that people have about others can influence the way they treat them. It can also cause people to act in a specific manner consistent with that of a person with that stereotype. This sub-theme looks at the knowledge teachers have developed on ASD based upon the stereotypical beliefs of the disorder found in the study.

Stereotypical beliefs: regarding the onset of ASD, data shows that some participants believe there to be a sudden change in an individual. "Somewhere the Autism *clicks in*" (FGI: TG, P2, L38). "It is almost as if its underlying and that just *triggered it*" (FGI: TK, P2, L60). "Perhaps there was an underlying condition that this maybe then just (clicked) *slipped him over the edge*" (FGI: TO, P3, L75-76). Some believe it to be due to a medical procedure, "Some of it has been disproved but if you go and look at the whole *vaccination route...*" (FGI: TT, P2, L49). Stereotypical beliefs of ASD characteristics were also identified, "They are often *very clever*" (FGI: TT, P1, L29). "They are just *awkward* and are almost *difficult to talk to* and they have *no empathy*" (FGI: TT, P1, L23-24). After analysing the data, it was revealed that teacher's identify red flags of ASD based upon these stereotypes.

Stereotypical Red Flag Awareness: The red flags, or warning signs of ASD, seem to be based on stereotypical beliefs, "Baby starts to make eye contact with the parent and responding, a child who is severely Autistic would not be doing those things" (FGI: TM, P2, L66-67). "Little eye contact" (FGI: TG, P3, L90). "The repetitive movements, the rocking, um... flapping it's that fixation on something" (FGI: TT, P3, L92-93). "They

also recoil when being touched” (FGI: TG, P3, L94). “They don’t respond to their names” (FGI: TT, P3, L97). Thus, teachers draw upon the generalised, stereotypical characteristics that a learner with ASD is believed to display in identifying and describing ASD.

4.5.1.3 Distinct Ambition

Borzykowski (2014) describes ambition as striving for status and achievements, or as having a strong desire to attain success in one’s life. Through the collection of data, the researcher identified the obvious, positive ambition that teachers portray through their actions and desire to attain further information and knowledge on ASD. Deci and Ryan (2000) draw upon this ambition, in the concept of self-regulated learning. This refers to one’s ability to control their learning environment through self-monitoring, motivation and self-reinforcement. Self-regulated individuals are metacognitively, motivationally and behaviourally active in their learning process (Shuy, 2010). Participants demonstrated this autonomy and search for greater competence through reading, self-study and actively seeking guidance. “When you *read up* about it there’s certain categories” (FGI: TG, P4, L104). “So I’ve just done a lot of *reading* on it and then worked from there” (FGI: TG, P4, L127). “. . . that is sort of what I’ve *looked up*” (FGI: TS, P5, L137). Strong motivation was also identified by participants’ comments, “And the knowledge we do have is because we’ve gone and *looked for it ourselves*” (FGI: TG, 6, L196). “It’s self-taught” (FGI: TG, P17, L509).

Some teachers appeared to lack motivation in actively seeking understanding of ASD; they felt obliged to do so. They express their obligation in this way, “I think you’ll do the research because *you don’t have an option*” (FGI: TS, P7, 233-234). “You want to research a bit more about a case you had because you *had to*...” (FGI: TS, P8, L239). However, it is evident that some teachers demonstrate appreciation for this learning through self-study. One participant expressed her genuine gratitude for the interview after contributing largely to conversation, “It was very interesting” (FGI: TS, P25, L962).

In this theme of manifested awareness of ASD, it is evident that teachers’ knowledge of ASD is predominantly developed through concrete experience, abstract conceptualisation and active experimentation in learning. Teachers appear to base their understanding of ASD on stereotypical beliefs of the disorder. Although a lack of

training on ASD is identified, teachers demonstrated motivation in their active engagement in seeking further understanding ASD.

4.5.2 Theme 2: Knowledge Ambiguity

Sennet (2016), explains ambiguity as a word describing either uncertainty or dubiousness, as does the Oxford English Dictionary. This refers to something having more than one possible meaning, which allows for confusion during interpretation. This theme speaks to the uncertainty around knowledge that teachers have acquired on ASD due to their misguided interpretations and misunderstanding. It also refers to teachers' uncertainty about how to apply their knowledge on ASD. Research conducted by Ciabusch and Martin (2012), suggests that knowledge ambiguity affects performance in different ways and directly influences the decisions and strategies of knowledge transfer – such as applying one's knowledge in specific contexts, in this case, the classroom environment. Sub-themes were identified to better explain the apparent knowledge ambiguity of teachers.

4.5.2.1 Misguided Perceptions

Perception is the process of recognising and interpreting sensory stimuli from the environment and responding to them in order to react within the external world (Williams, 2018). Perception allows for meaningful interpretations and viewpoints that are unique to an individual – these can affect the individual's beliefs, values, expectations, prejudices and life experiences. 'Misguided' refers to being misled or ill-informed as a result of bad judgment or wrong information or beliefs. Data collected revealed misguided perceptions held by teachers based upon naïve understanding and misconceptions of the aetiology of ASD.

Misconception of aetiology. Again, it appeared that some participants mistakenly believe the onset of ASD to be a sudden notable change, "It is almost as if its underlying and that *just triggered it*" (FGI: TK, P2, L60). The inquisitive nature of some participants' comments revealed uncertainty in their own understanding, "So it *makes you question* whether it is something you are born with or if it's something that develops' (FGI: TT, P2, L55-56). It appeared that there is a more dominant misconception around age of onset and notable identifiers, "...the video clips and what I've seen they can't communicate at like the age of 13. They aren't able to speak, they

cry, they throw tantrums” (FGI: TT, P1, L20-12). “They are often very clever” (FGI: TT, P1, L29). Interestingly, a participant discussed her perception of the aetiology of ASD as linked to modern day technology, “I also think *technology* has a huge...” (FGI: TS, P19, L711). Data analysed further suggests that teachers also base their knowledge of ASD on some disproven medical beliefs.

Medical beliefs: Many participants’ perceptions of what causes ASD seemed to be directed toward possible negative outcomes of medical interventions, “If you go and look at the whole *vaccination route* where they was a lot of sort of evidence” (FGI: TT, P2, L49-50). “He had the *MRI and the next day* the child sat like this (Hunched over table looking down- bowed down)’ (FGI: TS, P3, L 71-72). A participant commented on the advanced fertility treatments and the consequences thereof, “We didn’t have *fertility treatments*.... conceived without medical intervention... those children come *into the world early*” (FGI: TT, P20, L728-731). Evidence also shows that some teachers incorrectly believe ASD to be an extreme sensory integration/processing dysfunction (otherwise referred to as ‘SPD’ by participants), which weighs heavily on their perceptions of ASD.

Extreme sensory characteristics: A sensory integration/processing dysfunction refers to the brain struggling to receive and respond to information that comes through the senses. Participants seemed to mistakenly conceive ASD to be directly linked to an extreme sensory dysfunction, “But that could also be just a *sensory kid*.... but it’s more *extreme*” (FGI: TT, P3, L26). “Your *sensory integration* is a HUGE problem” (FGI: TG, P19, L685). A participant appeared to have general knowledge on sensory systems in babies yet seemed to misunderstand the role it plays in ASD; “They’re whipped out into this winking blinking light- Bing Bing- they go into electromagnetic field distress syndrome, and they.... their little sensory systems are never activated so they are in overload right from word go” (FGI:TT, P20, L733-735). “And that activates the sensory system” (FGI: TT, P20, L757). Although not directly related to ASD, participants started to discuss sensory dysfunctions and these go undiagnosed by doctors. Although this was not relevant to the topic of ASD, it proved vital in understanding how these teachers relied heavily on diagnoses of sensory dysfunctions when identifying ASD, “Doctors don’t... will not... diagnose your child with SPD” (FGI: TS, P21, L766). “Anything along the sensory spectrum they say to you, those children feel out of control” (FGI TT, P5, L167-168). As a result of this focus and reliance on sensory

dysfunctions, participants appeared to be misguided in their perceptions of where sensory difficulties lie on the Autism Spectrum. Many children with ASD either overreact or underreact to sensory stimuli from their surrounding environment. One participant's comment suggests that sensory dysfunction is the disorder, with Autism as the characteristic, "But how is that possible because *Autism falls under sensory?*" (FGI: TT, P21, L778).

Another misguided perception found in the data relates to the role of a mainstream school and inclusivity. It appears that teachers do not regard a mainstream environment as an appropriate environment for learners with ASD.

Mainstream school and inclusivity: The mainstream schooling system aims to include learners with barriers to learning such as ASD. Although these environments may not be the ideal and beneficial environment for these learners, mainstream schools aim to accommodate them as best as they can in accordance with White Paper 6 (2001). It seemed that some participants were aware of this initiative, "However, with inclusive education it does make it tricky because you *can't exclude a child*" (FGI: TS, P7, L198). "The behaviour in mainstream school will look out of place, it will look weird" (FGI: TT, P8, L255-256). It appeared that some participants misunderstand the role of the mainstream school, "And it's not the school's fault we are a mainstream school" (FGI: TG, P21, L793). "They came because they had been told that we are a small school and that we could cater to those needs" (FGI: TT, P12, L411-412). "Suggested that he should leave that environment because it wasn't suited and should go to a remedial school. And they came here" (FGI: TM, P12, L416-417). "He is now in a special environment" (FGI: TT, P9, L290). Thus, not all participants view the mainstream school environment and inclusivity to be suitable and adaptable for a learner with ASD. This suggests that teachers believe that learners with ASD belong in a special school environment and not in a mainstream school environment. When considering the role of mainstream schools as explained in EWP6 (DoE, 2001), this is not surprising as mainstream schools often do not have the resources to comply with the recommendations of accommodating learners with disabilities. Such underlying beliefs about mainstream schools and their ability to support learners with ASD with a lack of resources, will possibly manifest in the screening and support practices of teachers in the mainstream school. The data suggests that some teachers believe that

learners with ASD belong in a special school environment and not in a mainstream school environment.

4.5.2.2 Misrepresentation of ASD

The term 'misrepresentation' is defined as the giving of false information of an idea, situation, opinion or fact. Kenton (2018) speaks of 'innocent misrepresentation', which is a false statement of material fact due to the individual's lack of awareness of the situation at the time. In this sub-theme, the inaccurate information on ASD described by teachers has been identified as an improper representation of the disorder. However, the misrepresentation can also be considered innocent in nature due to their ambiguous knowledge on ASD.

The data collected suggests that teachers draw on their knowledge of other neurodevelopmental disorders to better understand and explain ASD, "George's mom brought in a book about *epilepsy*...I had a child at XXX who had a *cleft palate* and *harelip*" (FGI:TT, P7, L219-222). Data also suggested that participants deal with AD/HD, and as previously discussed, sensory issues, the most, "AD/HD" (FGI: TA, P19, L582). It was apparent that training on the more commonly encountered disorders and barriers to learning that participants experience is provided, "And it's also generally stuff that we *dealing with on a day to day basis* that we find valuable in our classroom" (FGI: TS,P22, L 818-819). "If there's a course on *AD/HD* then we all go" (FGI: TG, P22, L 822). This also emphasises the lack of training received by teachers on ASD.

Individuals with ASD have different needs to that of the 'neurotypical' learner. This results in teacher's being faced with a dilemma as they are required to address these different, specific needs of learners with ASD, but are to do so without 'othering' them. For the teacher, the dilemma occurs when considering whether to label a child so that can benefit from appropriate support, or not to do so. (Hoskin, 2016). This difference, or 'othering', was evident through participants' discrimination between learners with ASD and the 'typical learner'. A clear divide was identified through the way participants described 'normal' learners and learners with ASD.

Dilemma of difference: Participants' dilemma on how to deal with difference inclusively in this study was clearly visible in the terminology used to refer to learners and how they are identified, diagnosed and supported. Participants' language and comments

suggested a divide or 'difference' between learners with ASD and those without, "We delve more into the barriers that affect a *normal mainstream child*" (FGI: TG, P6, L190-191). "Have accepted them because they have that *diagnosis*" (FGI: TV, P1, L25). "They are *impaired*" (FGI: TG, P1, L33). ". . . then he *became* Autistic (FGI: TG, P3, L69)". "There was a child who was absolutely *normal*. . ." (FGI: TS, P3, L70). Misinterpretations of this disorder were also evident in the incorrect terminology that participants used throughout the focus group interview.

Incorrect terminology: Correct labelling of a learner with this disorder is '**a child with Autism**'. The ambiguity of appropriate diagnostic terminology was evident in the way participants described a child with Autism, ". . . an *Autistic* child" (FGI: TG, P2, L37). "It takes time to work with an *Autistic child* in your class" (FGI: TG, P6, L185). It also seems that some participants still use the old diagnostic terminology, ". . . all the *Asperger's* children" (FGI: TG, P24, L920). Incorrect descriptions of characteristics of ASD also appeared in participants' comments, "The one I had was *obsessed* with trains" (FGI: TG, P4, L102). Therefore, teachers show their lack of knowledge of ASD through their use of language and incorrect information. This is knowledge ambiguity relating to information. The following sub-theme discusses ambiguity regarding application.

4.5.2.3 Screening Ambiguity

Having previously discussed the meaning of ambiguity above, this sub-theme draws attention to the uncertainty around screening procedures and the differentiation between screening— *evaluating to identify a specific set of attributes or characteristics*— and identifying— *recognising the presence of such attributes or characteristics*.

The data collected provided insight into the uncertainty around screening procedures and the lack of knowledge of the process. The perceived lack of need for teachers to screen was also evident in the learners who had already been previously diagnosed. "So I've taught four Asperger's children and *I never had to diagnose* them" (FGI: TG, P4, L127). "He *was diagnosed* with it from the Autistic Association of South Africa" (FGI: TS, P11, L138). Teachers appear not to have been trained to screen, "We were *never trained* to pick up these specific learning disorders.... or neuro . . . Neurological disorders" (FGI: TT, P17, L600-601).

Some participants do not identify it as their role to screen, “Well *you can’t*, you can’t do that until you’ve actually got a classification, so we have to refer them to an Ed Pscyh” (FGI: TG, P8, 245-255). “...the next professional to see if they agree with what we see and then refer on to the professional who can actually make. . .” (FGI: TG, P9, 281-282).

Data suggests that teachers do not know what screening is. “We not *allowed* to screen because we are not qualified to screen properly” (FGI: TG, P10, L329). “You have to understanding that for *us* screening means that we are sending them to another professional to do an assessment” (FGI: TG, P10, 343-344). “What is a screening? It’s sending them to somebody” (FGI: TG, P9, L275). This data suggests that teachers do not take on the role of screening but instead refer the learners to a qualified professional as they do not know how to screen for ASD.

It was therefore not a surprise, when teachers were asked about the SIAS policy, and no participants were familiar with the term or its purpose; not one single participant had been trained in it before. “No **heads shaking**” (FGI: TA, P11, L385). However, the participants explained their own procedures, which unknowingly fell in line with the SIAS policy, “We do that though so we’ve been *doing that without knowing* it’s a policy” (FGI: TG, P12, L394). This was evident in a personally-adapted version of a Support Needs Analysis form 1 from the SIAS policy used by a teacher (PhA: 1). Although some teachers understand the difference between screening and identification, data shows that some do not.

Screening versus identification: It is apparent that participants are uncertain about screening procedures for the disorder and do not fully understand the difference between screening and identification. SIAS aims to maximise participation by standardising the systemic support of all learners (Department of Basic Education, 2014). In order to provide the most effective support plan for learners with Neurodevelopmental Disorders, it is vital that teachers are be able to screen for them. This requires the teachers’ understanding of the difference between screening and identification. Screening comes before identification. Therefore, teachers screen learners in order to identify the need for further intervention.

It seems that teachers do not understand the difference between screening and identification. “Identifying is when you notice that there are certain red flags that make

you suspect that the child might have Autism. Screening would be sending them to a professional to be tested” (SC: P14). However, one participant did display knowledge of the difference, “Identification is actually labelling the condition after having done the screening” (SC: P14). This lack of clarity on screening and identifying can negatively impact the procedure of identifying learners with ASD. Again, this is not surprising given participants’ lack of training and knowledge of SIAS.

This theme has highlighted the knowledge ambiguity of teachers regarding ASD, the kind of information teachers have and how to apply it. After careful analysis, it is evident that teachers’ actions are led by misguided perceptions of the aetiology of ASD. It also appears that misunderstandings of medical interventions and the role of sensory difficulties in ASD influence this acquisition of ambiguous knowledge.

The participants’ use of language shows their inaccurate knowledge on ASD, resulting in the misrepresentation of the disorder. The use of this incorrect terminology appears to have created a negative perception of the differences between the ‘neurotypical’ learner and the learner with ASD.

Findings also suggest that teachers understand the concept and importance of inclusivity in mainstream schools but are misguided in their understanding of the role the school plays in accommodating these learners.

4.5.3 Theme 3: Affective Capability

Emotion is a complex and important element in both personal and social life (Huitt, 2003). Certain parts of the brain are associated with different aspects of emotion. They are responsible for managing and controlling one’s own emotions as well as recognising the emotions of others (Bennet & Coleman & Co, 2019). Krathwohl, Bloom and Masia (1956) attempted to develop a taxonomy of the affective domain to organise levels of commitment in the classification of basic emotions, which are believed to develop through involvement and values (Huitt, 2003). According to table 4.3 below, teachers’ involvement in supporting learners, especially those with disorders such as ASD, leads to the integration of new values, which influences the emotions that teachers will associate with future exposure to similar situations, either negatively or positively.

These new emotions will influence their affective state of mind. This affects their ability, specifically looking at their emotional capability, of coping with the demands and results of dealing with learners who have disabilities. This affective capability contains two identified sub-themes from the data.

Table 4.3: Krathwohl, Bloom and Masia’s taxonomy of the affective domain (1956)

LEVEL	DEFINITION
Receiving	Tending to or being aware of something in the environment.
Responding	Showing new behaviours as a result of previous experience.
Valuing	Showing involvement or commitment.
Organisation	Integrating a new value into teachers’ set of values and ranking it amongst their own priorities.
Characterisation by value	Acting consistently with the new value.

4.5.3.1 Overwhelming Distress

This sub-theme discusses the excessive amounts of distress teachers experience in dealing with learners who have disorders like ASD. An individual can also explain distress as extreme worry, sadness, anxiety or pain experiences. Due to heightened job pressure and decreased job satisfaction of teachers, a growing prevalence of teacher stress has become an area of scrutiny and criticism over the past years (Guglielmi & Tatrow, 1998). The findings of this study enhance the validity of this statement as distress was seen to be prevalent in the responses of participants.

After analysing the data, it is evident that teachers experience personal strain and distress in the responsibility and process of dealing with a learner/learners who have a disorder such as ASD, “*I find it’s a big thing*’ (FGI: TB, P6, L178-179). “*It’s become so stressful*” (FGI: TT, P25, L947). “*They haven’t been good at picking things up and then you sit with this*” (FGI: TT, P24, L923-924). It seems as though participants are also aware of the implications having a learner with ASD has on the other children in their classes, “*So you’ve just got to be so aware that you’re being fair to everyone.*

After analysing the data, it appears that some teachers are apprehensive about dealing with learners with disorders like ASD. It appears that teachers' apprehension becomes heightened due to their lack of training and resources, but also due to experience of feeling duty-bound to do so as evident in the following: "If we don't know it is an Autistic child we *don't know how to help them*' (FGI: TS, P8, L240-241). "If there's a barrier *I suppose* it's your responsibility as a teacher..." (FGI: TS, P9, L302). "That's what we have to do, *we feel obligated*" (FGI: TS, P11, L371).

One participant brings forth the implications of unwilling parents, which suggests teachers' experience that despite their efforts, parental support is lacking which leads to teachers feeling dispirited which results in further and strained. "Because you *can only push* so much.... You do everything you can and still they *not always on board*" (FGI: TT, L473, 476). The overwhelming distress is not only attributed to teachers' inability to deal with these learners but is also caused by the workload teachers face.

Overwhelming workload: The Receiving level of Table 4.3, teachers tending to the needs of learners with disorders such as ASD, shows an increased workload. This negatively influences their affective state of mind, which results in their developing negative values and responses to dealing with these learners. As discussed in Chapter 1 (1.1), learners with ASD require adaptation of teaching methods and curricula and need more intervention-specific support and flexible accommodation. Participants seem to be overwhelmed with the amount of work required and the lack of training for it. "It's mind-blowing *how many portfolios we have had to take on* that we are not trained for" (FGI: TT, P17, L596). Although many teachers appear to be overwhelmed, one participant saw the value in the increased workload required when dealing with learners with disorders like ASD, as she believes it furthers one's teaching abilities, "But you *don't survive* being a teacher without these skills" (FGI: TB, P17, L618). Another element identified was the teachers' need for support, which is lacking.

Need for Support: In order to fulfil the Characterisation by Value level of table 4.3, one needs support to be able to act consistently with the new values. It appears that participants do not feel as if they receive this support, "You know what I would really like. . . and it comes down to money at the end of the day... is to have a *full time classroom assistant*" (FGI: TG, P22, L834-835). "I think it *alleviates a lot of stress* on the teacher if you have got somebody else that's there that understands the children"

(FGI: TG, P22, L838-839). It appears that this support is not easily sourced, “It’s *not easy to find*’ (FGI: TS, P23, L845). Having analysed this data, it is evident that teachers require support, as well as prior training, in their classrooms and workload. Having this would support allow them to become competent in teaching learners with disorders such as ASD, leading to affective capability and coping skills in meeting the demands of these learners who need extra support.

4.5.3.2 Weight of Parental Expectations

Parental expectations weigh heavily upon schools and often influence the cooperation and communication between parents and teachers. Goodwin (2017) speaks of respectful communication that helps show that schools engage with parents from a point of mutual concern about a student and not as an attempt to get parents to comply with the school’s wishes. Modelling this communication allows for sharing of aspirations for their children (Goodwin, 2017). This specific school is established in a well-developed, middle to upper class suburb, where it can be assumed that these parents are able to afford quality education for their children. These high expectations, according to Malhotra (2018), involve high quality of teaching, good curriculum, sports programme and extracurricular activities, spotless and pristine facilities, active involvement and communication with parents, and positive school reputation. The data collected in the focus group interview provides evidence of the pressures exerted by parents and felt by the teachers.

Data suggests that teachers experience pressure in meeting parent expectations. “And you’re *expected to know*” (FGI: G, P7, L199). “We were NEVER trained *to parent parents*” (FGI: TT, P17, L598). “You *don’t survive* the parent meetings” (FGI: TB, P17, L618-619). Comments made by participants explore the power parents hold, “We . . . ha ha. . . are at the *mercy of the parents* as well” (FGI:, TT, P7, L211). “You get *swallowed by parents*” (FGI: TB, P17, L625). “You get *annihilated*” (FGI: TS, P17, L626). “It’s because *we are bullied*” (FGI: TT, P18, L644). Teachers also displayed distress, hesitation and wariness to communicate issues that learners exhibit in class to their parents.

Teacher distress, wariness & hesitation: Participants appeared to exhibit wariness and hesitation when dealing with parents, “When you start making inferences like that you’ve got to *be so careful*” (FGI: TT, P4, L126). “You also *don’t want to p**** the

parents off” (FGI: TT, P14, L473). Teacher distress and exhaustion was also picked up on in comments made, “But actually at that point I was *tired of actually fighting* with them” (FGI: TG, P18, L642-643). The data also displays elements of parents’ possible denial and lack of cooperation with teachers and the school.

Denial and lack of cooperation: With denial and lack of cooperation, comes frustration. Participants appear to struggle with the lack of cooperation and the denial of parents when dealing with ASD and other disorders, “He ticked almost all of them and the *mom still refused* to go for an assessment” (FGI: TL, P4, L117-118). “You do everything you can and still *they not always on board*” (FGI:TT, P14, 476). “We are not psychologists is or psychiatrists who can diagnose that kind of thing and *parents actually take offence*” (FGI: TT, L123-124). “. . . unless the parents really *didn’t buy it*” (FGI: TT, P8, L268). Even though communication was discussed to be a main priority and expectation of parents, it seems that teachers struggle to communicate with these parents, “You’ve *tried* to talk to the parents” (FGI: TK, P12, L467). “It’s very *hard for the parents to hear* that there something wrong with their child” (FGI: TK, P10 L312-313). “Are *in denial*” (FGI: TS, P14, L479). These difficulties with parents appear to be a large factor negatively influencing teachers’ affective states of mind when dealing with learners with disorders such as ASD.

After discussing the emerging theme of affective capability, it is evident that teachers experience overwhelming distress in their responsibility of dealing with learners with disorders like ASD. An increasing workload and the lack of support for these teachers add to teachers’ personal strain. The weight of parental expectations and pressures, as well as denial and the lack of parental cooperation result in teachers feeling distressed and exhausted.

4.5.4 Theme 4: Inter-Collegial Reliance

Reliance can be described as the state of being dependent on someone or something for support that can be either positive or negative. Inter-collegial refers to the interaction between colleagues. This inter-collegial communication between health professionals and other important role players concerned in an individual’s life (such as teachers, parents, school and so forth) enhances well-being, self-awareness and positive outcomes for that individual (Birgitte, Ammentorp, Kofoed, Kyvik, & Kirsten,

2010). A sub-theme of internal collaboration and training was identified in the analysis of data.

4.5.4.1 Internal Collaboration & Training

Research by Arkansas State University (2017) suggests that teacher collaboration, or inter-collegial collaboration, is more prevalent today than it was in the past generation as it has been historically common for teachers to work independently. This collaboration is believed to contribute to school improvement. Working together sharing responsibilities, providing feedback and building trust, result in positive impacts on the teachers (Arkansas State University, 2017). Loop (2017) states that by teachers having a more collaborative approach, the likelihood that students will succeed increases.

The study findings suggest that teachers depend on collaboration with teachers and other professionals when dealing with learners with learning disorders. Dependence on other professionals, apart from teachers, was evident in the data, “. . . diagnosed with it from the Autistic Association of South Africa” (FGI: TS, P5, L138). “. . . the next professional to see if they agree with what we see” (FGI: TG, P9, L281). Training done by in-house professionals or colleagues appeared in the data, “. . .for example our therapists here. . . . they offer us training” (FGI: TT, P22, L809- 811). “Like if you’ve been on a course you have to give feedback to the staff so they can learn from it” (FGI: TG, P22, L815-816). Therefore, colleagues share their expertise. Some participants seem to turn to colleagues for second opinions, “First thing would be that you’d probably bounce it off a colleague” (FGI: TT, P8, L260). In a positive way, participants also appear to rely on multidisciplinary teams and interventions, “With a multidisciplinary approach where we bring the specialists in that are working with the child, bring the teacher in who’s working closely with that child every day, the parents and myself” (FGI: TT, P16, L568-570).

Apart from teaching colleagues and other professionals, it was also evident that these specific teachers rely most on the support, advice and interventions of the onsite occupational therapists. “Our experience with screening is more with OT” (FGI: TG, P9, 292). “I would go to our therapists on site that are SI trained” (FGI: TT, P11, L359). “AND we’ve also got OTs that start out doing sensory integration and if it doesn’t help, then they know” (FGI: TG, P19, L690-691). “He said after 20 sessions of SI OT there

should be an absolute difference” (FGI: TT, P14, L694-695). “It is completely done by an OT” (FGI: TS, P21, L 767). These findings reflected the over-reliance on OTs more than other fields such as psychologists and other categories of relevant therapists.

The teachers at this school appear to depend upon internal collaboration and training, which is often provided by on-site OTs. This suggests the reliance on one field of profession within this specific school. Although collaboration within the school is an important aspect, external training is still crucial.

4.5.5 Theme 5: Aversion to Change

Aversion to change refers to the negative short-term reaction to a change in a product, service or routine. (Sedley, 2012). Dealing with change can often promotes anxiety and other negative emotional experiences and frustrations. Razzetti (2018) explains how people fear change because they cannot anticipate the outcome – people are hardwired to resist uncertainty. He goes on to explain how people’s brains ‘prefer’ a predictable negative emotion or outcome over an uncertain one. Halvorson (2012) shows that people hold preferences for things that they are used to. Therefore, this theme draws on the possible resistance that teachers have toward change in job description and their role as a teacher, as well as the changes in procedural requirements of the school. This is discussed in the two sub-themes below.

4.5.5.1 Changing Role of the Teacher

The analysed findings of the study suggest that the role of the teacher has changed to a great degree and is not always welcomed by teachers. “It’s part of the job and the game that you are not trained for” (FGI: TV, P11, L373). “What happens then because where do your responsibilities end?” (FGI: TK, P14, L471). “I feel like almost... our jobs have become . . .” (FGI: TB, P16, L577). “Teaching has not become our main profession” (FGI: TK, P16, L584). “Twenty years ago that teachers didn’t have to do” (FGI:TB, P16, L587). “Our job description has changed dramatically . . . What our “responsibilities used to be 25 years ago” (FGI: TT, P16, L590, L591-592). “It’s mind-blowing how many portfolios we have had to take on that we are NOT trained for” (FGI:TT, P17, L596). “T was spot on– our job description has changed” (FGI: TS, P25, L944)”. “It’s become so stressful” (FGI TT, P25, L947). This change in job description is evidently not accepted by many teachers in this school, causing stress and

disapproval. Teachers do not feel that they have not been trained to deal with the changes.

4.5.5.2 Resistance to Change

The study also provides insight into the possible resistance teachers experience toward accommodating disorders, as well as accepting the change in classification of disorders. This is seen in resistance of teachers to the new classification of the Autism Spectrum Disorder in the DSM-5, which no longer classifies Asperger's as a separate disorder.

Classification of ASD: Resistance to the change is seen where some participants seem to be aware of the change in classification of the Autism Spectrum, yet they do not like it, "But now they put so many things under the umbrella of Autism so those children who used to be Asperger's children are now classified as Autistic children... I have a problem with that" (FGI: TG, P1, L4,-6, L7). ". . . Have been diagnosed with *Asperger's*" (GI: TM, P1, L23). "I've taught four *Asperger's* children" (FGI: TG, P4, L127). Apart from this, findings showed resistance in accommodating these learners and being flexible in the classroom.

Accommodation & Inflexibility: The findings of the study showed aversion to the changes required in accommodating learners with ASD, "You've got to be so aware that *you can't change the rules*, you can't change what you've set out" (FGI: TB, P6, L174-175). "How do you allow them to get away with certain things that you don't allow the others to get away with?" (FGI: TK, P7, L202-203). "There was no ways in that situation that we could have dealt with a child like that" (FGI: TT, P17, L 4). Some participants have acknowledged the need to include these learners. "However, with inclusive education, it does make it tricky because you *can't exclude* a child" (FGI: TS, P7, 198). This aversion to change is therefore identified as a main theme emerging from the data regarding teacher's ability and willingness to work with learners who have ASD.

Having explored the emerging theme of aversion to change, it is evident that teachers resist change in job description and in their role as a teachers, which is expected by the SIAS policy. It appears that teachers do not fully accept the required change in terms of flexibility and in accommodating learners with disorders like ASD. Apart from

their professional role and practice as teachers, it appears that they also resist the change in the classification of Autism Spectrum.

4.6 COLLATERAL FINDINGS

'Collateral findings' refers to findings which are not central to the main question that this study wishes to answer, but are still of great significance. A collateral theme emerged during the analysis of the collected data and will be discussed below.

4.6.1 Theme 1: Reputational Constraints

Reputation can be conceptualised as a social evaluation of the public towards a person, group or organisation, which change as individuals' opinions change through direct and indirect experiences (Tshabangu , 2012). Findings of Skallerud (2011), suggest that parental satisfaction significantly affects the reputation of a school – good teachers and parent orientation impact on parents' loyalty. In the competitive market-place for school development, reputation is an important element.

Study findings reveal the schools' and teachers' awareness of upholding reputation with the parents and the public. A common theme identified was the misrepresentation of the type of school and the services it can offer. "They came because they *had been told* that we are a small school and that we could cater to those needs" (FGI: TT, P12, L411-412). ". . . suggested that, he [the learner] should leave that environment because it wasn't suited and should go to a remedial school. And they came *here*" (FGI: TM, P12, L416-417). "Because the classes were small, the environment was more relaxed so it was *assumed* that we would be able to cope" (FGI: TB, P12, L 419, 420). Teachers' personal reputations are also identified as an element, which they strive to protect.

Teacher Reputation: Participants suggested that pressures from parents made it necessary to safeguard their professional reputations to a degree: "You've got to *cover up your own beep*" (FGI: TS, P18, L534). Participant teachers further suggested that safeguarding their professional reputations also protected other colleagues from similar pressures: "You do it to *protect* the next teacher too" (FGI: TK, P18, L552).

It appears from the analysis that the participant teachers are wary of how parents may misinterpret teachers' willingness to help, and their compassion for the children, which

could result in confrontational relationships, “You also don’t want to p*** the parents off because that’s what you do. They keep turning or *keep thinking that you have it in for their child*” (FGI: TT, P14, L473-474). “...parent still says to you, ‘*actually you not qualified enough... I don’t think you’ve done enough.*’” (FGI: TK, P14, L468–469). Confrontational relationships with parents can potentially hurt professional reputations and lead to a cautious approach to supporting learners in the classroom.

It is evident that school and teacher reputation is largely considered and protected when dealing with parents and learners with disorders. Protecting their reputation in the eyes of the public is a large factor in the way teachers communicate with parents and how the school is run.

4.7 CHAPTER SUMMARY

This chapter has discussed the analysis of data, the organisation and thematic explorations of the findings from the focus group interview, sentence completions and physical artefacts. Chapter five will conclude the study and discuss recommendations relating to the research questions.



CHAPTER 5:

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the study and to summarise the findings from the study in relation to research questions. Conclusions will be drawn in this chapter and it will conclude with recommendations derived from these conclusions.

5.2 SUMMARY OF FINDINGS

In order to draw on specific conclusions and recommendations based on these findings, and specifically to answer the research question, the aim and findings of each chapter will now be summarised.

Chapter 1 focused on highlighting the main characteristics of Autism Spectrum Disorder (ASD), a neurodevelopmental disorder, and the increasing prevalence in South Africa to allow the reader greater perspective regarding the disorder. It then went on to discuss the importance of early identification of ASD and the role the school plays in doing so. The role of teachers in screening for barriers to learning and providing support for these learners was covered to show the importance of the teacher being able to identify disorders when working with learners with ASD. This led to the discovery of a gap in research regarding teachers' knowledge and practice in appropriately screening for ASD. A brief description of the theoretical framework of this study was provided as well as the ethical considerations to ensure that this research was conducted in an ethical manner.

The main research question of the study was: *What do teachers know about Autism Spectrum Disorder and how do they practise appropriate screening for it in a mainstream primary school?*

Chapter 2 introduced the reader to the review of literature on ASD. It started by thoroughly discussing the theoretical framework of this study. This included Bronfenbrenner's Bioecological Model (1979), where Vygotsky's Social Constructionist View on Disability was explored, supported by the Developmental

Theory of Autism and Theory of Mind. The discussion of the theoretical framework was to give the reader a better understanding of the implications and fundamental needs of learners with ASD within the learning environment.

A more detailed discussion of the classification and prevalence of ASD, both internationally and locally, was followed by the exploration of inclusive education in the South African schooling systems to provide insight into the required act of accommodating learners with disorders like ASD. Teacher's knowledge and practice was further delved into to provide understanding of their role in educating learners.

Chapter 3 described the detailed research design and methodology of this study. The qualitative and exploratory nature of the research was explained, describing the interpretivist paradigm chosen for this study. Further, the appropriate data collection methodology to answer the questions set out in Chapter 1 (1.4) was chosen. This included focus group interviews, sentence completion exercises and physical artefacts. It was made clear to the reader that the data collected would be analysed qualitatively against the backdrop of validity, reliability and transferability, while adhering to ethical considerations.

Chapter 4 focused on the Thematic Analysis of data, which according to Maguire and Delahunt (2017), is the process of identifying patterns or themes within qualitative data. In this study, the data was scrutinised in order to gain understanding and insight into the participants' experiences and views with reference to the research questions. The protocol followed while analysing and synthesising the data was discussed to allow the reader understanding of the process taken. Most importantly, this chapter explored the emerging main themes and sub-themes of the data in line with the research questions in Chapter 1 (1.4).

With reference to Table 4.2 in Chapter 4, the main themes and sub-themes that emerged from the data analysis are:

Theme 1: Manifested Awareness of ASD

- Teachers' insight and knowledge on ASD is dominantly acquired through experiential learning. This knowledge is often undifferentiated in nature due to lack of training on ASD, which resulted in the insufficient emphasis on reflective observations in Kolb's Experiential Learning Cycle, see Figure 4.5.

- Teachers are found to have stereotypical awareness of the aetiology, onset and red flags of ASD. It was identified that teachers' knowledge is largely based upon generalised, stereotypical beliefs with regards to onset and characteristics of ASD. This is seen as a result of a lack of training on ASD, leading to undifferentiated knowledge.
- Teachers demonstrate appreciation for learning as well as a distinct ambition to better understand ASD through their self-driven behaviours. This is seen in their self-study, motivation and self-regulated learning behaviours. However, some teachers feel obligated to actively seek this further understanding, leading to reluctant self-study and less appreciation for learning.

Theme 2: Knowledge Ambiguity

- Teachers' perceptions on the aetiology of ASD are often misguided as they are based upon naïve understanding and misconceptions of the disorder.
- Teachers sometimes attribute ASD to the negative outcomes of medical interventions such as vaccinations and fertility treatments.
- A misguided perception held by many teachers is that ASD is an extreme sensory deficit. It is apparent that teachers rely heavily on the diagnoses of sensory dysfunctions to understand the 'misbehaviour' of learners especially when describing ASD characteristics. This has led to uncertainty as to whether ASD is the main disorder with sensory difficulties as a characteristic of the disorder; or if sensory difficulties are the main disorder, with ASD as a characteristic of the disorder.
- Misconceptions are prevalent amongst teachers with regard to the role of an inclusive mainstream school. Although it is not always the most ideal environment for a learner with ASD, some teachers perceive a mainstream school to be inappropriate and unsuitable for the inclusion of learners with disorders like ASD, especially due to the lack of ideal resources.
- Teachers draw on their acquired knowledge of other disorders like AD/HD and sensory disorders to understand ASD and thus often misrepresent ASD. Teachers also misrepresent ASD through creating a dilemma of difference or 'othering' through their choice of language and incorrect terminology when referring to the disorder and the 'neurotypical' learner.

- Teachers are uncertain of the procedures and requirements of screening for ASD as many teachers deal with learners with ASD who have already been diagnosed. Many teachers do not know the difference between 'identification' and 'screening' due to lack of training and exposure. It is evident in the findings that many teachers do not identify screening as their role or their responsibility.

Theme 3: Affective Capability

- Teachers experience distress, personal strain, apprehensiveness and are overwhelmed by the increased workload required of them when dealing with learners with ASD. Many teachers do not feel like they receive the required support in doing so.
- Parent power, expectations and pressures weigh heavily upon teachers. As a result, teachers experience distress, hesitation and wariness in communicating with the parents of learners who experience barriers to learning. It is clear that denial and the lack of cooperation of many parents adds to teachers' frustration and negative states of mind.

Theme 4: Inter-collegial Reliance

- Internal collaboration between colleagues and other professionals appears to be important to teachers. Their dependence on in-house training by Occupational Therapists as well as teacher-led training is evident. However, little formal training by other professionals in the fields of psychology, remedial therapy, speech therapy and so forth appears to take place.
- Teachers rely on multidisciplinary teams and interventions as means of support in dealing with learners with disorders like ASD.

Theme 5: Aversion to Change

- Teachers identify that their professional role as teachers have changed over the years. Teachers appear to be apprehensive of this change as they are required to take on portfolios that they are not currently trained for.
- Although aware of the importance, many teachers resist the change in policy of inclusivity and the need to accommodate learners with disorders like ASD

in mainstream classrooms. This is due to teachers feeling ill-equipped in doing so.

- Resistance in using new classification and diagnostic terminology of ASD is identified as teachers use the old terminology when referring to learners with ASD. It is also evident that many teachers still use the term 'Asperger's Syndrome' despite knowing the new classification of the Autism Spectrum.

5.3 COLLATERAL FINDINGS

During the analysis of data, collateral information was identified. This information is not central to the main question that this study wishes to answer but is found to be of great significance. The main collateral theme that emerged is:

Theme 1: Reputational Constraints

- Teachers and the school strive to uphold their positive reputation with the parents and the public.
- Teachers feel the need to protect themselves and their reputation from parents. It appears that teachers' concerns in pleasing the parents, and their attempts to avoid offending parents, results in distress. Teachers appear to feel targeted by the parents when accused of being unwilling or uncompassionate towards the learners.
- Protecting their reputation in the eyes of the public plays a large role in the way teachers communicate with parents and how the school is run.

5.4 CONCLUSIONS AND RECOMMENDATIONS BASED ON FINDINGS

The overall purpose of this study was to explore and describe teachers' knowledge and practice in appropriately screening for ASD in a mainstream primary classroom in order to implement Autism-specific interventions. In this section, the researcher attempts to arrive at conclusions stemming from the analysis. The following broad conclusions and further recommendations for the school and future research following from the results of the data analysis are also discussed.

5.4.1 Conclusions

This study aimed to explore and describe teachers' knowledge and practice in appropriately screening for ASD in a mainstream primary classroom in order to implement Autism-specific interventions. The first objective of this study was to explore and describe the tools teachers select to screen for ASD in a mainstream primary school. The second objective was to explore the procedures teachers follow when screening for ASD in a mainstream primary school. After thorough study of the different data sources gained during this research, the following conclusions were made.

In terms of the first objective, refer to Chapter 1 (1.5.2), it is evident that teachers' main resource for screening for ASD consists of basic general observations and general concerns around poor academic or emotional progress within the classroom. There were no identified set tools that teachers use to screen for disorders like ASD; instead, they rely on their innate ability to identify concerns based upon teacher training and experience as well as on inter-collegial guidance. Although no unified tool was found amongst teachers, it is evident that some teachers have their own personal list of red flags of ASD which guides their observations.

In terms of the second objective (refer to Chapter 1 (1.5.2)), data analysed showed that many teachers do not believe it is their role to screen for ASD. Therefore, it is apparent that teachers refer the learners that they are concerned about to other professionals like Educational Psychologists or Occupation Therapists. Although not specific to the act of screening, teachers do have a general procedure that they follow when they identify an at-risk learner. This general procedure involves collaboration and communication between the principal, the parents, the head of department (HOD) and the teacher.

Other general conclusions are now discussed according to the themes identified around the findings of the study.

5.4.1.1 Limited knowledge due to lack of training on ASD

As discussed in chapter 2 of this study, effective teaching of learners with ASD requires teachers to have understanding and knowledge of Autism in order to address the barriers to participation and learning experienced by these learners (Dovey, 2016).

The conclusions drawn upon in this study suggests that teachers do not have sufficient knowledge of ASD including the aetiology, characteristics, red flags and appropriate interventions and support required. Teachers misunderstand and have stereotypical understandings of this disorder. It is evident that teachers base their understanding and knowledge of ASD on personal experience in previously dealing with these learners with the disorder and not on formal training. Learning through prior experience was found to be one of the main ways teachers acquired knowledge about ASD and how to deal with it (refer to Chapter 4 (4.5.1.1)). Hendricks (2011) explains how teachers need thorough knowledge of ASD in order to implement appropriate interventions. Apart from their higher education training to be a qualified teacher, it is evident that there is a lack of sufficient training on ASD provided by the school. This includes the lack of training on screening procedures and tools used to detect red flags of ASD and the appropriate classroom interventions required. The lack of training means that teachers are not receiving the necessary scaffolding required to deal with ASD, as discussed by Vygotsky (1978). This prevents access for learners with ASD to equal educational opportunities supported by the notion of social justice (Landsberg, 2005), as discussed in chapter 2 (2.2.1.2), of this study.

It can be concluded that due to the lack of training received on ASD, teachers gain most of their knowledge through experiential learning. This experiential learning predominantly falls within Kolb's Experiential Learning Cycle phases, see Figure 4.5, of Concrete Experience, Abstract Conceptualisation and Active Experimentation. Teachers have little exposure to the Reflective Observation phase due to the lack of training that they receive.

In addition, it is concluded that the lack of training on ASD has resulted in teachers perceiving learners as different. This is seen in their language and labelling of learners. The 'othering' created in this dilemma of difference, due to lack of training on acceptable language, general understanding and ability to cope with these diverse learners, has resulted in a clear divide between 'neurotypical' learners and learners with ASD.

5.4.1.2 Resistance to change

As previously discussed in Chapter 2 (2.2.1.1), of this study, learners and teachers spend most of their five-day weeks interacting in the school environment, which falls

within the learner's Mesosystemic level of Bronfenbrenner's Bioecological Model (1979). It is therefore important for teachers to be able to adapt to necessary changes required by these learners' unique needs, as discussed by Saggars (2016). Conclusions drawn from the findings suggest that teachers resist the changes in their role as a teacher as they are more frequently faced with dealing with barriers to learning, like ASD, in which they are not trained. This is seen where teachers acknowledge the change in their responsibilities and the required uptake of portfolios, but express their disapproval and stress experienced as a result. Although teachers identify the importance of inclusive education which is discussed in Chapter 2 (2.4), aversion to accommodation and flexibility when dealing with learners with ASD is evident as teachers raise concern for remaining fair to all learners in the class with regards to rules and expectations. As discussed by Dovey (2016), these teachers experience this resistance to accommodation as they are faced with the challenge of the lack of appropriate teaching resources and curricular adaptations to provide this inclusive support.

It can be concluded that teachers also resist the change in the classification of the Autism Spectrum Disorder in line with the new DSM-5 (2013), which now classifies Autism Disorder, Pervasive Development Disorder (PDD-NOS) and Asperger's Syndrome under one umbrella. Teachers persist in referring to learners with *Asperger's Syndrome* after acknowledging this change and voicing their disapproval of it. It is therefore evident that, although teachers are aware of these changes, they do not conform to and approve of them.

5.4.1.3 Teacher distress and frustration with parents

Learners with ASD struggle with executive functioning as explained in Chapter 2 (2.2.4.1) of this study. In order to assist these learners and guide them through these skills, both teacher and parents are required to work together to help remedy these difficulties (Bowen, 2008). This collaboration of the teachers and parents occurs within the Mesosystemic level of the learner in Bronfenbrenner's Bioecological Systems Model. Conclusions drawn from the findings suggest that teachers do not feel that these interactions between teacher and parents are easily attainable due to high parent expectations. It is evident that teachers feel pressured, intimidated, hesitant and distressed when dealing with the parents of learners with identified struggles. The

denial and lack of cooperation of many of these parents results in the frustration and overall negative affective states of mind of teachers when dealing with disorders like ASD. Again, it is evident that the Mesosystemic interaction between parents and teachers indirectly influences the learner and the way the teacher engages with them. As previously explored in this study, Irvine and Lynch (2009), identify one of the several essential elements of inclusion of learners with barriers to learning to be effective parental involvement. One is able to conclude that this essential element is insufficient due to these parent issues and expectations faced by the teachers.

5.4.1.4 Over-reliance on Occupational Therapists

Despite the identification of positive aspects of collaboration within the school, based upon findings, it is evident that this specific school and these specific teachers heavily rely on the guidance, training, support, advice and interventions of the on-site Occupational Therapists (OTs) and are continually scaffolded accordingly (Vygotsky, 1978). Although sensory sensitivity is common to most individuals with ASD it is not yet fully understood (Bowen, 2008). OT largely focuses on assessing individuals' sensory integration which involves using one's senses to take in and organise sensory information from the environment (Arky, 2019). This reliance on a single professional field (being OT) has resulted in teachers' intense focus on sensory issues in learners with ASD and is often drawn upon when trying to understand the general behaviour of other learners. Without intention to scrutinise the professional insight, training or capabilities of OTs, it is concluded that because the teachers receive most of their training on disorders like ASD from the on-site OTs, they are not adequately exposed to alternative insights and understandings of the disorder which is provided by other important professionals such as Educational Psychologists, Psychiatrists and others with expertise in ASD. Therefore, besides sensory difficulties, other red flags that were discussed in the Developmental Theory of Autism in Chapter 2 (2.2.2), are not always identified by teachers.

5.4.2 Conclusions Relating to the Theoretical Framework

Conclusions will now be discussed from the perspective of the theoretical framework of this study, as discussed in Chapter 2 (2.2). These conclusions demonstrate how

teachers appear to gain their knowledge and develop their practice in screening and supporting learners with ASD in this specific school.

Mesosystemic level interactions between teachers and on-site OTs appear to be the dominant form of interaction in terms of Bronfenbrenner's Bioecological Systems Model. The teachers relied disproportionately on the training and guidance of the on-site OTs. There appeared to be less interaction between other important role players and professionals within the Mesosystemic level. Despite this, there was generally positive collaboration with colleagues.

Teachers also appear to support learners with ASD through their Microsystemic level interactions with these learners. One-on-one engagement between these learners and the teachers resulted in the teachers' social construction of knowledge on how to support them. Although these interactions are important for teachers to gain this knowledge, and thus develop their practice, they also need to consider the influence of the dimension of time. Teachers need to be aware of the expected timeframes for learners to reach certain developmental milestones, in order to be able to identify red flags. This relates to the Chronosystemic level influences that affect a learner's developmental processes.

From Vygotsky's social-cultural viewpoint, it is evident that teachers acquire knowledge on ASD through their experiences of engaging with learners who have ASD. It is also evident that teachers try to learn from one another through the mediation of inter-collegial and on-site OT collaboration, to move from not knowing to a stance of knowing. However, their lack of knowledge on ASD suggests insufficient interaction, and thus insufficient mediation in the scaffolding process. In other words, more training is required.

In conclusion, according to the Bioecological Model, teachers need to be aware of the different systems that are relevant in engaging with learners. They need to take cognisance of the importance of the interactions between the learners' families, their school and the educational system. Although being more aware of these system interactions won't directly help teachers in the classroom, it will help them understand the learners' unique needs and resources, which will help develop their knowledge on ASD.

It is also evident that teachers require increased mediation of other professionals, such as Educational Psychologists, Psychiatrists and others with expertise in ASD in order to adequately develop their knowledge and assist them in the classroom situation.

5.4.3 Recommendations for Practice

Following the results and conclusions of this data analysis, possible recommendations for practice of either the school, the teachers or Educational Psychologists are presented. Based upon a careful exploration of relevant and current literature as well as conclusions drawn from the research process, these recommendations can be made with regard to the support of teachers in their knowledge and practice of screening for ASD within the mainstream school environment.

5.4.3.1 Limited knowledge due to lack of training on ASD

For the school: As ASD has become a growing epidemic with a worldwide increase in individuals diagnosed with the disorder, the need for early identification and intervention within the school environment through appropriate use of resources is crucial to the outcomes of these children (Brock, Jimerson, & Hansen, 2007). Thus, it is recommended that appropriate formal training on ASD is outsourced by the school to provide the teachers with adequate knowledge and skills in dealing with learners. This is supported by Hendrick (2011), who stresses the imperative need for schools to provide the necessary Autism-specific education and interventions.

For teachers: As explored in Chapter 1 of this study, one needs to be aware of the unique ways that learners with ASD think and view the world in order to adapt traditional teaching methods (Hewit, 2004). For teachers to do so, it is recommended that they find external courses on ASD to attend if none are offered by the school, especially those teachers who are motivated by their ambition to improve their skills. Thus, using their distinct ambition, which was identified in the findings. Although not always possible, it would be ideal for the school to fund these courses, which means the school could possibly create a budget for course and training each year. Due to time constraints and the identified increased workload of teachers, it is suggested that these courses are attended during their school holidays. These courses on ASD must include the basic concepts and red flags of ASD, the appropriate screening measures, tools and resources teachers can use or consult to address red flags, as well as

appropriate interventions for accommodating learners with ASD in a mainstream classroom. It would allow for the strengthening of the Mesosystemic level interactions, depicted in Figure 1.1 of Chapter 1, of these learners as effective interaction between learner and teacher can develop allowing for the successful scaffolding of these learners through appropriate teacher intervention.

5.4.3.2 Resistance to change

For the school: In order to address resistance to change amongst teachers, it is recommended that a school based support team (SBST) is established within the school system as expected in the Education White Paper 6, which states that school-based support should be available for all learners. The implementation of an SBST will also assist by supporting teachers in dealing with these learners (Department of Basic Education, 2001). As defined in Chapter 1 (1.6.4), the SBST is an on-going collaborative problem-solving unit of the school made up of a variety of personnel based at the school. Their regular meetings allow for development in teacher support, assistance and instructional strategies to support learners with barriers to learning like ASD. Findings of the data conclude that teachers seek support and assistance in dealing with, and supporting, learners with ASD. Such teacher support would diminish the resistance to the need to accommodate these learners in their classes.

Anders (2017) explores how one makes accepting change a part of the workplace culture. She explains how change requires a reframe as well as feedback from members prior to making decisions. This includes adjusting the environment to allow for the embracing of change. As teachers are found to resist the change in classification of ASD and the uptake of portfolios that they are not trained for, as concluded above, it is recommended that the school provides the necessary training on ASD to allow for this environmental adjustment. This is reinforced by Economy (2015), who explains that preparation and training help people transition more easily into new roles. Therefore, preparation and training on ASD would allow teachers to transition through the changing role of the teaching profession.

For teachers: As discussed in the thematic exploration in Chapter 4, it is evident that teachers practise autonomy in their learning, which falls in line with the self-regulated learning theory of Deci and Ryan (2000). It is therefore recommended that teachers harness this motivation and remain metacognitively and behaviourally active in their

learning through self-study on ASD. This could also aid their understanding of the changes made in the classification of the disorder, which could lead to greater acceptance. Once uncertainty and confusion are addressed through this self-study and deeper understanding of ASD, there is room for acceptance and rationalisation of the change (Gentry, 2014).

5.4.3.3 Teacher distress and frustration with parents

For the school: The distress and frustration experienced by teachers when dealing with parents is concluded to be due to lack of efficient communication, lack of cooperation and challenging parent behaviour. Findings suggested that this challenging behaviour is often a result of high parental expectations, poor communication between teacher and parent, and parent denial of teacher-reported concerns of their children. As discussed in Chapter 2, parents and teachers need to work together to remedy learning difficulties of learners with ASD (Bowen, 2008). In order to do so it is recommended that a comprehensive policy is established and implemented by the school to manage and support the process of teaching and learning which affects learners within the system who experience barriers to learning. Such a policy would include comprehensive descriptions of actions and measures taken in identifying at risk learners in order to provide appropriate interventions. All teachers when dealing with at risk learners to ensure effective support is provided would follow this policy. A suggested policy to follow is the Screening, Identification, Assessment and Support (SIAS) Policy explored in Chapter 2 (2.4.1). This process identifies and provides effective support plans for the at risk learners' unique needs, promoting maximum participation by all learners (Department of Basic Education, 2014). It is believed that should parents have a formal, detailed record of all identified concerns, teacher actions, teacher-implemented interventions, collaborative meetings and possible solutions, they should be more cooperative, accountable and satisfied with the efforts of teachers in helping their children.

5.4.3.4 Over-reliance on Occupational Therapists

For the school and teachers: In Chapter 2, Bridgemohan (2018), refers to teachers' involvement in first-tier screening to identify individuals at risk of ASD. Second-tier screening is then used to discriminate ASD from other Neurodevelopmental Disorders. This second-tier screening is conducted by an appropriate professional who is

equipped with training and expertise in the field such as a Psychologists, Psychiatrists, Occupational Therapists and so forth. These professionals collaborate further throughout their assessment processes. As the process of identifying and diagnosing a learner with ASD is so complex, it is recommended that the school does not solely rely upon the expertise of OTs but also on the expertise and assessments of other relevant professionals. It is recommended that workshops and training are not limited to those provided by on-site OTs but are also presented by external Psychologists, Psychiatrists and other relevant professionals. This would allow for the broadening of the teachers' and school's understanding of ASD and for different insights into the complex disorder.

5.4.4 Recommendations for Educational Psychologists

The scope of practice of an Educational Psychologist includes assessing, diagnosing and intervening to optimise functioning in the learning and development of individuals. Part of their responsibility it to advise, design, evaluate and manage educationally-based programmes with the ultimate role in providing expert opinions (HPCSA, 2017).

Having identified this as the role of an Educational Psychologist, and as there appears to be a large emphasis on OT training and insight into ASD, it is recommended that Educational Psychologists provide psychoeducation on ASD through presenting more workshops and training to schools and teachers. This is important as the lack of training was identified as a main theme in this study.

Multidisciplinary teams are vital in understanding and meeting the needs of learners, especially those who experience barriers to learning (Winfrey, 2018). Multidisciplinary teams allow for different professionals to share their expertise with each other which allows for deeper understanding and continuous learning. It is also recommended that multidisciplinary teams of the various professionals who are mentioned throughout the study present these workshops. This would allow teachers a more comprehensive understanding into the disorder from different perspectives and fields of expertise.

5.4.5 Recommendations for Future Research

This study focused on Foundation Phase teachers' knowledge and practice of screening learners with ASD in one selected mainstream primary school. This study was predominantly explorative in nature and focused on gaining teacher opinion on

the problem. The following recommendations for future research opportunities are suggested:

- A study on institutional support for Foundation Phase teachers from a multi-disciplinary perspective could shed light on teachers' needs in developing teacher knowledge and practice of screening of learners with ASD.
- Investigating explicitly the practice of Foundation Phase teachers in terms of the unique approaches, strategies and tools these teachers use to screen through observational studies in primary schools in one district.
- Exploring parental education programmes for parents to become partners in supporting Foundation Phase teachers in screening for learners with ASD.

A comparative study of Foundation Phase teachers' knowledge and practice of screening for ASD in schools from varying quintiles in one district may shed light on contextual factors that influence the eventual support given to teachers.

5.5 CRITICAL REFLECTION AND LIMITATIONS OF THE STUDY

The planning, organising and execution of this research study took place over a period of roughly 18 months which was within the time frame that the researcher anticipated. With constant revising and the evolving of questions that this study aimed to answer, the journey to reach recommendations and conclusions was a long but interesting process.

The research topic is still one that interests the researcher a great deal, especially after the findings and conclusions had been made. Thus if the opportunity was given to further research this topic, the researcher would certainly choose to look more in depth into the required training and support teachers require on Autism Spectrum Disorder, as well as specific approaches and skills needed to support these learners.

The way in which this research was conducted was not flawless. A challenge faced by the researcher was the selection of participants. The researcher had initially intended to have three teachers from each Foundation Phase grade as participants in the study. The selected school is a small, new and developing school which resulted in only two participants from each Foundation Phase grade being willing to participate in the study.

From a methodological aspect, slight accommodations were made to the data-collection process. In the initial planning, three group interviews consisting of three Foundation Phase teachers of each grade were to be held separately. Unfortunately, the ethical clearance to conduct the research was received later than anticipated and given the fact that only two teachers from each grade had volunteered to participate, I decided to conduct one focus group interview instead. This alteration in the data collection process was also based upon the participant numbers as the researcher believed one large group would yield more in-depth data compared to small groups consisting of only two participants. Leung and Savithiri (2009) explain the advantage of larger groups of participants in a focus group interview as it allows participants to 'piggyback' off each other through building on each other's ideas. This proved to be true as conversation amongst all the participants allowed for greater insight and discussion to flow throughout.

The Head of Department (HOD) of the Foundation Phase, was not considered for participation as I intended to gain insight into the teachers' authentic knowledge and experience in the study. The HOD however, expressed a wish to be part of the study and was therefore included in the data collection by completing the Google Form sentence completion, as well as being part of the focus group interview.

On reflection, the inclusion of the HOD may have had an influence on the collection of the data as the HOD is an experienced teacher, particularly in working with children with learning barriers. Thus, the HOD proved to be a vital source of information in the data analysis of the findings but may have added a dimension to the collected data and the analysis otherwise not available had only Foundation Phase teachers participated. Having the HOD present in a focus group with the Foundation Phase teachers possibly became an inhibiting factor during the interview as the teachers may have withheld opinions and views had it not been the case. In allowing the HOD to be a participant in the study may have impacted the credibility of the study somewhat in terms of the careful selection of participants, as discussed in Chapter 3 (3.3.1).

5.6 STRENGTHS OF THE STUDY

A strength of this study was the engaging, willing and accommodating school, which welcomed the process in the hope of gaining further insight into the research topic themselves.

A strength of this study includes the qualitative design, which allowed for participants to give great insight into their current understandings and practices. The combination of the sentence completion exercise and focus group interview allowed for the researcher to determine individual knowledge as well as the interactions and in-depth explorations between participants during the interview. The focus group interview allowed for the participants to feel at ease in a non-threatening group setting which yielded valuable data and opinions as the researcher got to sit back and observe the interesting dynamics. All participants asked for their score on the sentence completion and for an answer sheet memo for their own insight and learning. This curiosity revealed the willingness of the participants to learn. Each participant was given this requested memo after the focus group interview was conducted in order to prevent it influencing the interview question answers.

Data was collected in a timely manner. Both the sentence completion and the focus group interview were conducted within a week of each other. This allowed for minimal interruption in the school as well as for the concise collection of data. This also allowed for time to re-contact participants if any clarity was required. The analysis of data was member checked by fellow peers in the Educational Psychology Masters programme to ensure that the researcher did not miss any important points.

It is noted that after the focus group interview took place, the next staff meeting held was about screening as teachers were asked to bring along the discussed artefacts to share with the others. Post-interview, the researcher shared the SIAS Policy with the HOD for the school's interest. Thus, it is apparent that staff development was seen to be initiated through this research process.

Overall, the depth of knowledge and insight into the current understanding and practices of teachers regarding Autism Spectrum Disorder gained from this study was invaluable.

5.7 RESEARCHER BIAS

The researcher's involvement throughout this study allowed room for possible bias and limitations. The subjective nature of a qualitative study makes it difficult for the researcher to become fully detached from the data (Shah, 2019). At the time of this study, the researcher was working at the school where data was collected and thus

had previously established relationships with the participants. These relationships with both the school and participants possibly limited the rigour of the study, which is explained in Chapter 3 (3.3). The researcher attempted to avoid compromising the rigour of the study by maintaining an objective stance and attitude when working with the participants. The importance of this was also discussed with the researcher's supervisor throughout the study.

The researcher and the researcher's supervisor collaboratively set the questions of the focus group interview and the sentence completion. However, the researcher oversaw the sentence completion and conducted the focus group interview alone. Therefore, the researcher was responsible for the collection of data, which allowed for possible limitations in the validity of the data gathering process, as explored in Chapter 3 (3.3.1).

The researcher led the process in the analysis of data that could have imposed personal bias in the interpretation of the collected data. In order to avoid the possibility of imposing bias on the data analysis process, the researcher made use of member checking of the coding and findings, as discussed in Chapter 4 (4.2).

As a student Educational Psychologist, the researcher aimed to avoid assuming a bias and subjective attitude regarding the findings relating to other professional fields, especially Occupational Therapy. The findings that emerged were member checked and discussed with the researcher's supervisor to ensure that unfair bias was not placed on another profession out of favour for the researcher's own professional field.

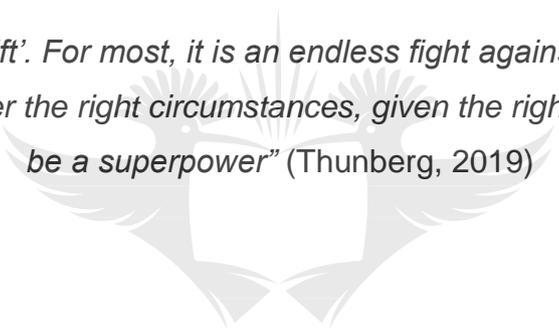
5.8 CONCLUDING REMARKS

This chapter provided a summary of the research. A brief overview of findings and conclusions of this study were included. Recommendations for practice and for future research were made. Finally, limitations of the study have been acknowledged alongside the discussion of its strengths and possible researcher bias.

In this study, the researcher sought to explore and describe teachers' knowledge and practice in appropriately screening for Autism Spectrum Disorder in a mainstream primary classroom in order to implement Autism-specific interventions. The researcher conducted the collection of data where she explored the understandings and insights that teachers have relating to ASD. The researcher then explored the unique practices

that teachers currently employ as professionals in their field. The analysis of data allowed for the presentation of findings. The findings revealed that teachers lack knowledge on ASD due to the lack of training. It was interesting to discover that teachers develop and grow their knowledge through the experience of working with these learners who have ASD. Unexpected findings emerged during the analysis of the data. One finding revealed the power that parents appear to hold over the school and the teachers, while another finding revealed the importance the school and teachers place on their reputation. To conclude, the researcher suggested that it would be interesting to further explore the training and support teachers require in ASD. In closing, the researcher would like to end on a quote by Nobel Peace Prize nominee, Greta Thunberg,

“No, autism is not a ‘gift’. For most, it is an endless fight against schools, workplaces and bullies. But, under the right circumstances, given the right adjustments, it CAN be a superpower” (Thunberg, 2019)



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APPENDIX A: ETHICAL CLEARANCE– UNIVERSITY OF JOHANNESBURG

NHREC Registration Number REC-110613-036



ETHICS CLEARANCE

Dear Amy Segeren

Ethical Clearance Number: Sem 1 2019-100

Teachers' knowledge and practice in screening for Autism Spectrum Disorder in a mainstream primary school.

Ethical clearance for this study is granted subject to the following conditions:

- If there are major revisions to the research proposal based on recommendations from the Faculty Higher Degrees Committee, a new application for ethical clearance must be submitted.
- If the research question changes significantly so as to alter the nature of the study, it remains the duty of the student to submit a new application.
- It remains the student's responsibility to ensure that all ethical forms and documents related to the research are kept in a safe and secure facility and are available on demand.
- Please quote the reference number above in all future communications and documents.

The Faculty of Education Research Ethics Committee has decided to

- Grant ethical clearance for the proposed research.
- Provisionally grant ethical clearance for the proposed research
- Recommend revision and resubmission of the ethical clearance documents

Sincerely,



Dr David Robinson

Chair: FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE

APPENDIX B: RESEARCH SITE APPROVAL

DECLARATION BY THE SCHOOL/ PRINCIPAL	
<p>1. I accept the conditions associated with the granting of approval for Amy-Leigh Segeren to conduct research at [REDACTED] School.</p>	
<p>2. I understand the nature of the research and that the student will respect the confidentiality of the participants and the information obtained.</p>	
<p>3. I am aware that the student will be working under the supervision of Mr. M.P. van der Merwe and co-supervision of Ms. T.D. Soni.</p>	
<p>4. I [REDACTED] hereby grant permission for Amy-Leigh Segeren to conduct the above research project at [REDACTED] School.</p>	
Signature:	[REDACTED]
Date:	14 May 2018
School stamp:	[REDACTED]

APPENDIX C: PARTICIPANT CONSENT AND CONFIDENTIALITY



UNIVERSITY OF JOHANNESBURG

Faculty of Education

Department of Educational Psychology

Participant Consent Form

Full Title of project: Teacher's knowledge and practice in appropriately screening for Autism Spectrum Disorder in a mainstream primary school.

Researcher: Amy-Leigh Segeren

Please read through the following declarations below.

I hereby:

- Agree to be in the above research project as a participant.
- I understand the nature of this research and I understand that my personal details will be kept strictly confidential throughout the study.
- Though I have been asked to participate, I understand that my participation is voluntary and that I may withdraw my consent and participation in this study at any time with no penalty.
- I agree to be contacted by the researcher should she need any clarity during the data collection process.
- I agree to the use of anonymous quotes in publications.

By signing below, I acknowledge having read all the information in this consent form and agree to all the conditions stated above.

Name of participant

Date

Signature

Name of researcher

Date

Signature

APPENDIX D: FOCUS GROUP INTERVIEW SCHEDULE

FOCUS-GROUP INTERVIEW

Three focus-group interviews will be conducted respectively, Grades 1-3.

SCHEDULE FOR FOCUS GROUP INTERVIEW	
1. OPENING	
A	[Establish rapport] Good afternoon everyone, my name is Amy-Leigh Segeren and by now you know that I am conducting research on teacher's knowledge and practise in appropriately screening for Autism Spectrum Disorder in a mainstream primary school.
C	[Purpose discussed] Today I would like to ask you a few questions about your personal knowledge and practise when it comes to the procedures for screening for ASD and identifying the need to do so.
D	[Motivation] I hope to use this information to identify areas in need of improvement within the inclusive schooling system, specifically when looking at accommodating learners with ASD, as early identification of possible characteristics of ASD at an early school age would improve the outcomes for these children through early responsive intervention, support and possible further placement.
E	[Timeline discussed] Although I do have specific questions that I wish to ask you all, this interview is more of an open discussion amongst all participants of which I invite you to take part in. Please don't feel obliged to respond to any questions you wish not to and please feel free to interact with colleagues and myself during these discussions. It should take between 30 to 60minutes depending on the responses offered.
F	<p>[Administration matters] If you don't mind I would like to audio record and video record this interview so that I can transcribe the information at a later stage- however, no personal details or names will be used. Are there any of you who do not wish to be recorded? <i>(If consent isn't given, ask that they have a separate individual interview afterwards or give the option to withdraw from the interview altogether)</i>. Please can you all take a few minutes to sign consent for this audio recording.</p> <p>I also ask that in the case where you speak about a specific learner or individual, that you do not use their names for confidentiality purposes.</p> <p><i>*Start audio & video recording*</i></p>

Transition: Let me begin by asking you some brief questions around what you believe Autism Spectrum Disorder to be. I know you have completed sentences on ASD, so this is just a recap to gauge the general knowledge around this disorder.

2. BODY

A. [Topic] Knowledge

1	To start off I would like to ask if anyone would like to share what they think Autism Spectrum Disorder is?
2	What do you think the symptoms or 'red flags' of Autism are? (elaborate: <i>is this based upon what you have read, were taught or have experienced?</i>)
3	<i>Use this opportunity to clarify or elaborate on findings in the questionnaire.</i>
4	<i>Use this opportunity to clarify or elaborate on findings in the questionnaire.</i>
5	<i>Use this opportunity to clarify or elaborate on findings in the questionnaire.</i>

Transition to the next topic: Now that we have spoken a bit about what ASD is, let us look at identifying the need to screen for this disorder in your classrooms.

B. [Topic] Practice: Screening and identification of red flags.

1	Have any of you ever dealt with a learner with suspected or professionally diagnosed ASD or any other learning disorder? (elaborate: <i>diagnosed by who; age and grade of learner; type of support and procedure followed; personal experience of dealing with such child as a teacher</i>)
2	Let's talk about learners who had not been diagnosed. How did you become aware and suspect that a learner in your classroom may be presenting ASD? (elaborate: <i>allow conversation direction to follow participants' responses- probe for more information. Incorporate the below questions into the conversation</i>)
2	Can anyone share what they think 'screening' means?
3	Do you believe it is your duty as a teacher to identify the need to screen for learners with disorders such as ASD? (elaborate: <i>why? or whose is it?</i>)
4	Do you feel equipped enough to identify a child with ASD within your classroom through the use of screening measures?

5	What abilities (skills, experience, knowledge etc), do you feel you still need to develop in order for you to perform this required act of screening?
6	<i>Predicted statistic- leave out if not applicable:</i> We have established that not everyone has been faced with the need to screen for disorders such as ASD in their teaching career thus far. Hypothetically speaking, if you suspected a child in your class was 'different' to the typical child and believed that they required screening, how would you go about this? (elaborate: <i>first step. specific procedure etc.</i>)
Transition to the next topic: We have established the general opinions around 'screening duty' and what screening is. Let us now look further into the specific procedures that are implemented within your classrooms and school when it comes to the act of screening.	
C. [Topic] Procedure: SIAS Policy and screening measures	
1	Is anyone familiar with the term 'SIAS Policy'? (elaborate: <i>what does it mean to you; can you give a brief definition; what do you think the purpose of the policy is?</i>)
2	Has anyone received training in this policy? (elaborate: <i>through the school or external; what year; was it effective</i>)
3	SIAS stands for Screening, identification, Assessment and Support. What does the 'I'- Identification, mean to you as a teacher?
4	Does the school use the SIAS policy or do they perhaps use alternative screening measures and procedures? (elaborate: <i>what other procedures; are they efficient?</i>)
5	Apart from school procedures, do you as an individual teacher perhaps use preferred or different screening tools or procedures when you suspect possible red flags of ASD in your class? (elaborate: <i>what do you use; why; how did you find it; do you feel it is effective? Ask for possible copy of tools/artefacts.</i>)
6	Do you believe it is essential to have one specific coherent procedure that the entire school follows, or do you think it is better for individual teachers to use the tools and procedures what they believe to be suitable?
Transition to the next topic: I am sure you can all agree with me in saying that there is always room for improvement and development in everything we do- this will now take us into looking at you as an individual teacher and your personal training in identifying and screening for ASD.	
D. [Topic] Professional Development	

1	Are any of you currently or have any of you been on the SBST or does the school perhaps have a different system of heads in place? (elaborate: ask for how long and in what capacity if any teachers answer yes).
2	(Ask if any members on SBST to avoid unease of others answering in their presence- if no members present then ask openly). Do you find the school's SBST/heads to be effective in addressing and supporting learners with disorders such as ASD?
3	Is there a specific common learning disorder that seems to be more dominant within your school? (elaborate: do you believe there is a reason for this?)
4	Do you believe that the school has adequately provided the necessary training in screening procedures for disorders for you as teachers?
5	If you could make a suggestion to the management team that they can implement to support your efficiency as a teacher in a classroom with diverse learners with different disorders and challenges such as ASD, what would it be?
Transition to the next topic: That brings us to the end of our interview.	
3. CLOSING	
A	[Maintain rapport] Thank you for your input, I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know or that you would like to add before we end off?
B	[Action to be taken] I should have all the information I need. If I feel I need clarity on any of the answers while transcribing, would you mind if I contact you personally over the phone?
C	[Thanks for participating] Thanks again for participating and sharing your insight and experiences, enjoy the rest of your afternoon.

APPENDIX E: SENTENCE COMPLETION GOOGLE FORM

Autism Spectrum Disorder (ASD)

Please complete the sentences by filling in what you deem to be the most appropriate answer.

PERSONAL EXPERIENCE WITH ASD

1. I have been teaching for _____ months/years.

Your answer _____

2. I have suspected ASD in _____ learners in the past.

Your answer _____

3. I have learned about Autism from _____.

Your answer _____

4. If I had reason to believe that I had a learner with ASD in my class, I would _____.

Your answer _____

CHARACTERISTICS AND IDENTIFICATION

1. A basic definition of Autism Spectrum Disorder (ASD) is _____ 0 points

Your answer _____

2. The term 'red flags' refers to _____ 0 points

Your answer _____

3. Five characteristics that I believe to be red flags of ASD are _____ 0 points

Your answer _____

4. Red flags of Autism can be identified before the age of _____ 0 points

Your answer _____

5. Autism Spectrum Disorder is often co-morbid with_____.

Your answer _____

6. Learners with suspected ASD need to be professionally diagnosed by_____.

Your answer _____

7. Learners with suspected ASD need to be professionally diagnosed because_____.

Your answer _____

8. Routine for learners with ASD is_____.

Your answer _____

9. Social skills for learners with ASD is_____.

Your answer _____

10. Communication for learners with ASD is_____.

Your answer _____

11. Interventions that focus on_____ help manage

12. Children with Autism (are/are not)_____ able to develop play skills that go beyond the use of repetitive behaviour in interacting with toys.

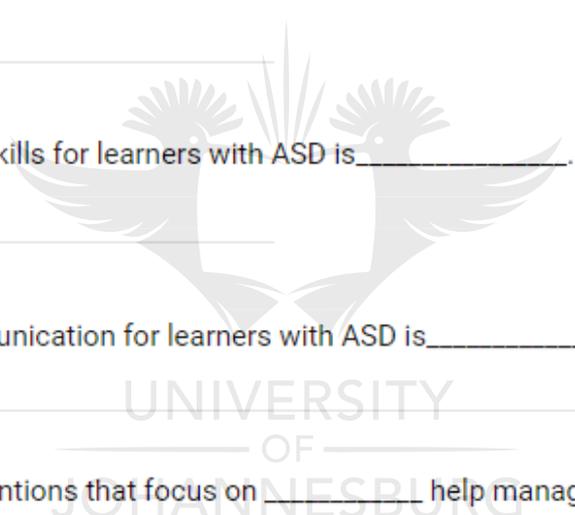
Your answer _____

13. When it comes to forming bonds with teachers, children with ASD_____.

Your answer _____

14. For children with ASD, understanding the feelings and emotions of others is _____.

Your answer _____



15. High or low sensitivity of visual, auditory, tactile, or olfactory stimuli is (common/uncommon)_____ in children with ASD.

Your answer _____

16. The difference between males and females in displaying symptomatic behaviour of ASD is_____.

Your answer _____

17. ASD is a neurodevelopmental disorder that effects the functioning of the brain. With the right intervention_____.

Your answer _____

18. "Screening" means_____.

Your answer _____

19. I have done _____ screenings for ASD.

Your answer _____

20. The tools that I use to screen for ASD are_____.

Your answer _____

21. The tools that I would use to screen for ASD are_____.

Your answer _____

22. The difference between identification and screening is_____.

Your answer _____

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APPENDIX F 1: PHYSICAL ARTEFACT 1

IEP (individualized Education Program) Checklist

Child's Name: _____ Today's date: _____

Age: _____ Date of Birth: _____ Grade: _____

Reason for IEP: _____

IEP Team Participants: _____

Objectives: By the end of the IEP, the child should be able to: _____

Goal Time Frame: _____

Current Academic performance: _____

How is the child's current position affecting or impacting learning? _____

What support has worked? _____

What additional support will be required? _____

Where will the IEP be done? _____

Who will be supervising? _____

Is the child on chronic medication? YES/NO If Yes, What? _____

TO BE COMPLETED AFTER IEP TIME SPAN GIVEN

Has there been a noted improvement in school work? _____

_____ rating of improvement: 1-weak - 10-strong _____

If yes, what improvements have been seen? _____

What is your next plan? _____

Signature of person administering the IEP _____ Date: _____

APPENDIX F 2: PHYSICAL ARTEFACT 2

Red Flags for ASD

- Little awareness of others.
- Imaginative play may be poor. E.g. cannot play with a wooden block as if it is a cat.
- The development of speech and language may be atypical, absent or delayed.
- Minimal reaction to verbal input and sometimes acts as though deaf.
- Changes in routine or the environment, may cause distress.
- Pursues activities repetitively and cannot be influenced by suggestions of change.
- Inappropriate attachment to objects.
- Displays of extreme distress and/or tantrums, for no apparent reason.
- Difficulty in interacting with others and little or no eye contact.
- No real fear of dangers.
- Prefers to play alone.
- Self-injurious behaviour, e.g. head banging, scratching or biting.
- Unusual habits such as rocking, hand flapping, spinning of objects etc.
- Indifference to, or dislike of being touched, held or cuddled.
- Sense of touch, taste, sight, hearing and/or smell may be heightened or lowered.
- Sudden laughing or crying for no apparent reason.
- Uneven gross/fine motor skills.
- Abnormal sleeping patterns.

Regional Representation

Autism South Africa has regional development officers throughout South Africa. Please contact Head office if you would like to contact one of these officers in a specific province.

Helpful Contacts

Sandra Klopper
National Director
Email: director@autismsouthafrica.org

Claire Allen
National Education Facilitator
Email: educator@autismsouthafrica.org

Autism South Africa
Children's Memorial Institute
Gate 13
Cnr Joubert Str Ext & Empire Road
Braamfontein 2001
PO Box 84209, Greenside 2034
Tel: +27 11 484 9909
Fax: +27 11 484 3171
Email: info@autismsouthafrica.org
Web: aut2know.co.za

Show your care, be ASD aware

Facts about ASD

- ▶ Developmental disabilities such as ASD are brain-based, neurological conditions that have more to do with biology than with psychology.
- ▶ Not one person with ASD is affected in the same way.
- ▶ ASD is usually diagnosed by the time a child is 3 years old.
- ▶ ASD is found in every country, every ethnic group, and every socio-economic class.
- ▶ Autism is diagnosed four times as often in boys than in girls.
- ▶ Children who are diagnosed with ASD need early intervention as soon as possible.

Recent diagnostic changes

With the May 2013 publication of the DSM-5 diagnostic manual, all autism disorders were merged into one umbrella diagnosis of ASD.

- ▶ A diagnosis of ASD now includes several conditions that used to be diagnosed separately:
 - ▶ Autistic disorder
 - ▶ Pervasive developmental disorder (PDD-NOS)
 - ▶ Asperger Syndrome

These conditions are now all called autism spectrum disorder (ASD).

What causes ASD?

ASD is thought to have a genetic component which results in atypical neurological development and functioning. A lot of research is being done to try and find the cause of autism, but as yet there are no definite answers.

- ▶ There is agreement however that autism is no-one's fault. It is not a parents fault that their child has been born with autism.
- ▶ It is NOT a psychological or emotional disorder.
- ▶ It is NOT the result of bad parenting and children with ASD do NOT choose to misbehave. Misbehaviours are often reactions to the environment and are expressions of the difficulties people with ASD experience.

What is ASD?

Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development.

ASD is a developmental disability and people with ASD may communicate, interact, behave, and learn in ways that are different from most other people.

The learning, thinking, and problem-solving abilities of people with ASD can range from gifted to severely impaired.

Some people with ASD need high support (a lot of help and intensive intervention) while others need low support (less help and less intensive intervention).

Autism spectrum disorder (ASD) are characterized, in varying degrees, by

- ▶ difficulties in social interaction,
- ▶ verbal and nonverbal communication,
- ▶ repetitive behaviours and
- ▶ differences in sensory perception.

Understand
Autism

Get
Involved

+27 11 484 9909

info@autismsouthafrica.co.za

APPENDIX G: SAMPLE OF FOCUS GROUP INTERVIEW TRANSCRIPTION

FOCUS-GROUP INTERVIEW

22/05/2019

1 To start off I would like to ask if anyone would like to share what they think Autism
2 Spectrum Disorder is?

3 Well, for me it has changed over the years because an autistic child sat and did this (shook
4 hands) and is in his own world with neurological issues or social issues. But now they put so
5 many things under the umbrella of Autism so those children who used to be Aspergers
6 children are now classified as Autistic children, and I think I had this discussion with you the
7 other day, I have a problem with that because as soon as you say that someone is Autistic
8 then some people imagine you as that (shakes hands). but there is different degrees.

9 T: Absolutely, and if you look at... well my understanding of Autism is that there is on the
10 very extreme ummm... if you look at the continuum of the whatever you call it, of the
11 sensory integration dysfunctions, it is on the very very extreme and Aspergers is also on that
12 spectrum. So those children that are Aspergers children who are not in control of their
13 emotions and are socially inept fall under that umbrella- it's an extreme type of behaviour,
14 and its, ya, it is with your brain, it is a neurological thing.

15 M: yea a neurological thing their behaviour, and their socialising and

16 G: How you actually see the world and interpret the world.

17 T: And their emotions and the social skills are all linked and they are not in control of that.

18 O: I have experienced it in adults, not children. Those diagnosed with Asperger's syndrome
19 are always extremely awkward in social situations and I think that's how I've always seen it.
20 I've never known or met a person who is diagnosed properly with Autism but the video clips
21 and what I've seen they can't communicate at like the age of 13. They aren't able to speak,
22 they cry, they throw tantrums. That kind of thing I've seen but from friends that I know that
23 have been diagnosed with Aspergers- they are just awkward and are almost difficult to talk
24 to and they have no empathy. It is just differences that they have come out with and we
25 have accepted them because they have that diagnosis.

26 G: It is very broad.

27 B: Sonia was talking about their EQ level. Does Autism affect their IQ then? ~~oo?~~ So you can
28 still have a very clever child?

29 T: They are often very clever.

30 B: Yes but it is the EQ and social stuff.

31 T: Ya.

32 G: but it doesn't go hand in hand. They don't have to be bright but they are often. Some
33 Autistic children are not. They are impaired. Well that's what I think.

34 ME: so all these symptoms you have mentioned- behaviour emotional, social- would you
35 say this is something that can develop as they age and develop or do you think this is
36 something that they are born with?

APPENDIX H: SAMPLE OF FOCUS GROUP INTERVIEW CONTENT ANALYSIS

FOCUS-GROUP INTERVIEW 22/05/2019		TRANSCRIPTION	PATTERNS/COMMENTS/QUESTION	CODE PATTERNS
1.	To start off I would like to ask if anyone would like to share what they think Autism Spectrum Disorder is?			
2.	G: Well, for me it has changed over the years because an autistic child sat and did this (shook hands) and is in his own world with neurological issues or social issues. But now they put so many things under the umbrella of Autism so those children who used to be Aspergers children are now classified as Autistic children, and I think I had this discussion with you the other day, I have a problem with that because as soon as you say that someone is Autistic then some people imagine you as that (shakes hands). but there is different degrees.		<ul style="list-style-type: none"> change- times have changed but still same stereotypic thoughts- old DSM criteria mentioned personal dislike/disapproval & struggle to accommodate change Basic knowledge Acknowledges the complexity of Autism 	<ul style="list-style-type: none"> resistance to change basic knowledge
9.	T: Absolutely, and if you look at... well my understanding of Autism is that there is on the very extreme ummm..... if you look at the continuum of the whatever you call it, of the sensory integration dysfunctions, it is on the very very extreme and Aspergers is also on that spectrum. So those children that are Aspergers children who are not in control of their emotions and are socially inept fall under that umbrella- it's an extreme type of behaviour, and its, ya, it is with your brain, it is a neurological thing.		<ul style="list-style-type: none"> basic knowledge- viewed as extremes knowledge from reading/hearing not from true understanding ("continuum of whatever you call it") 	<ul style="list-style-type: none"> Basic knowledge self study for knowledge uncertainty
15.	M: yea a neurological thing their behaviour, and their socialising and		<ul style="list-style-type: none"> reiterating 	<ul style="list-style-type: none"> focus on neuro
16.	G: How you actually see the world and interpret the world.		<ul style="list-style-type: none"> holistic view of ASD 	
17.	T: And their emotions and the social skills are all linked and they are not in control of that.		<ul style="list-style-type: none"> control deficit 	<ul style="list-style-type: none"> lack control
18.	O: I have experienced it in adults, not children. Those diagnosed with Asperger's syndrome are always extremely awkward in social situations and I think that's how I've always seen it.		<ul style="list-style-type: none"> uncertainty- knowledge based on videos etc 	<ul style="list-style-type: none"> uncertainty- knowledge from research
20.	I've never known or met a person who is diagnosed properly with Autism but the video clips and what I've seen they can't communicate at like the age of 13. They aren't able to speak,		<ul style="list-style-type: none"> clear distinction made between Asperger's and ASD 	<ul style="list-style-type: none"> lack knowledge- ASD & Asperger's viewed separately
21.	they cry, they throw tantrums. That kind of thing I've seen but from friends that I know that have been diagnosed with Aspergers- they are just awkward and are almost difficult to talk to		<ul style="list-style-type: none"> Diagnosed them- clear distinction between normal people and those with ASD- acceptance based on sympathy? 	<ul style="list-style-type: none"> distinction between normal and ASD sympathy- link to views on inclusion - ??
22.	and they have no empathy. It is just differences that they have come out with and we have accepted them because they have that diagnosis.			
24.	G: It is very broad.		<ul style="list-style-type: none"> No certainty... rather - understanding not distinct enough? Very general - lacks specifics? 	<ul style="list-style-type: none"> uncertainty
26.	B: 5 was talking about their EQ level. Does Autism affect their IQ then? or? So you can still have a very clever child?		<ul style="list-style-type: none"> uncertainty- seeking further understanding assumption that ASD means unintelligent 	<ul style="list-style-type: none"> seeking clarity misconception ASD linked to intelligence
27.	T: They are often very clever.		<ul style="list-style-type: none"> intelligence vs emotion/social 	<ul style="list-style-type: none"> misconception of intelligence and socialisation
29.	B: yes but it is the EQ and social stuff.		<ul style="list-style-type: none"> misconception of intelligence and ASD 	<ul style="list-style-type: none"> intelligence, emotion and socialisation
30.	T: Ya.			
31.				

APPENDIX I: SAMPLE OF SENTENCE COMPLETION GOOGLE FORM CONTENT ANALYSIS

Amy-Leigh Segeren
Google Form

QUESTION	ANSWER	TOTAL	PATTERN/CODE
1. I have been teaching for _____ months/years.	<ul style="list-style-type: none"> • Almost 7 years • 11 years • 18 years • 2 years • 22 • 5 years • 1 year • 25 years 	<ul style="list-style-type: none"> 1 1 1 1 1 1 1 1 	<ul style="list-style-type: none"> • range between 1- 25 • average: 12 years • 'old school teacher' and new generation
2. I have suspected ASD in _____ learners in the past.	<ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • None • A few times • Yes 	<ul style="list-style-type: none"> 1 1 1 1 1 1 1 	<ul style="list-style-type: none"> • everyone has suspected ASD expect for 1
3. I have learned about Autism from _____.	<ul style="list-style-type: none"> • A school talk • My own research • A friend of mine who has a child with Autism. • reading, internet and colleagues • Courses I have been on. Reading I have done. Interaction with parents and children on the ASD spectrum • my own reading • No one • Sensory Integration workshops and my own reading 	<ul style="list-style-type: none"> 1 1 1 1 1 1 1 1 	<ul style="list-style-type: none"> • own research, reading, few indirectly related workshops and own initiate as source of knowledge • Not everyone has learnt about ASD

APPENDIX K: DIAGNOSTIC CRITERIA OF AUTISM SPECTRUM DISORDER

AUTISM SPECTRUM DISORDER DIAGNOSTIC CRITERIA (APA, 2013)

- A.** Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
 2. Deficits in nonverbal communicative behaviours used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures: to a total lack of facial expressions and nonverbal communication.
 3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behaviour to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.
- B.** Restricted, repetitive patterns of behaviour, interests, or activities, as manifested by at least two of the following, currently or by history.
1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
 2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behaviour (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
 3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests)

4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).
- C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).
- D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
- E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Specify if;

With or without accompanying intellectual impairment

With or without accompanying language impairment

Associated with a known medical or genetic condition or environmental factor

(Coding note: Use additional code to identify the associated medical or genetic condition.)

Associated with another neurodevelopmental, mental, or behavioural disorder

(Coding note: Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioural disorder[s].)

With catatonia (refer to the criteria for catatonia associated with another mental disorder,

pp. 119-120, for definition) (Coding note: Use additional code 293.89 [F06.1]

catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

