

**Social inclusion of learners with Autism Spectrum Disorder within South
African primary mainstream schools**

by

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Declaration of Professional Edit

'Social inclusion of learners with Autism Spectrum Disorder within South African primary mainstream schools'

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I declare that I have completed a language and formatting edit of this dissertation (excluding references) to the best of my ability in the time available. I have not influenced the content of this dissertation in any way.



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Abstract

This dissertation embarks on a comprehensive exploration of social inclusion for learners with Autism Spectrum Disorder (ASD) in mainstream South African primary schools. The severity of the learners interviewed varied, with some being high-functioning and others ranging between high and low functioning. The research study discusses the global and South African prevalence of ASD, emphasizing the social challenges faced by learners. Theoretical underpinnings in social constructivism set the stage for understanding inclusive practices for neurodiverse learners. Ethical considerations guide the research, ensuring participant well-being and confidentiality, particularly for the vulnerable population of learners with ASD. The study details the use of face-to-face interviews and self-constructed open-ended questionnaires for data collection, emphasizing the thematic analysis approach.

Findings from the study highlight the barriers learners face, including challenges in forming friendships and sensitivity to sensory stimuli. Facilitators of social inclusion, such as supportive teachers and positive reinforcement, emerge. Recommendations from participants encompass creating autism-friendly classrooms, fostering friendships, reducing homework loads, and improving communication. The dissertation connects these findings to existing literature, addressing barriers, facilitators, and recommendations. Teachers' challenges in accommodating diverse learning needs, insufficient support, and managing emotional behaviors are discussed. Current teaching strategies are outlined, including personalized attention and sensory stimulation management. Participants offer advice for future teachers, emphasizing patience, flexibility, and awareness of ASD.

Despite limitations in sample size and time constraints, the study provides a roadmap for improving social inclusion. Learners stress the importance of accommodating environments, improved organization, and enhanced communication. Teachers advocate for raising awareness, collaborative group work, and reducing sensory stimulation. Future researchers are urged to include a diverse range of schools and participants, incorporating parents, principals, and peers for a comprehensive understanding.

Key words: Autism Spectrum Disorder, social inclusion, mainstream schools, South Africa, social challenges, barriers, facilitator, teaching strategies.

Plagiarism declaration

Full names	Linelle Alberts
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Topic of work	The social inclusion of learners with Autism Spectrum Disorder within primary mainstream schools in a South African context.

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List of abbreviations

ABA	Applied Behaviour Analysis
ASD	Autism Spectrum Disorder
DBE	Department of Basic Education
DIR	Developmental Individual Relationship-based Model
EWP	Education White Paper
HIC	High-income countries
HMDs	Head-Mounted Devices
LMIC	Low- and middle-income countries
LOLT	Language of learning and teaching
LSAs	learner support assistants
PECS	The Picture Exchange Communication System
SSA	Sub-Saharan Africa
SST	Social Skills Training
STRs	student-teacher relationships
TEACCH	Treatment and Education of Autistic and related Communications Handicapped Children

UNESCO United Nations Educational, Scientific and Cultural Organisation

VE Virtual Environment

VR Virtual Reality

ZPD Zone of Proximal Development

Chapter 1: Problem statement and rationale

1.1 Introduction

The following section introduces the research's problem statement and its rationale. It also defines commonly used terms and clarifies abbreviations. The section wraps up by providing an overview of the content covered in each of the five subsequent chapters of the dissertation.

1.2 Background and rationale

Autism Spectrum Disorder (ASD) face incredible challenges daily, with everyday social interactions, lack of communication skills and repetitive behaviours potentially causing the exclusion of these learners within mainstream schools (Angus & Monson, 2014; Grzadzinski, Huerta & Lord, 2013). As per the DSM5-TR (American Psychiatric Association, 2022) criteria, ASD is delineated by behavioral patterns and marked by challenges in interpersonal interaction, repetitive actions and specific interests. (Lai et al., 2013). Angus and Monson (2014) extend the DSM-5-TR perspective, contending that ASD constitutes a neurodevelopmental condition that causes challenges in various developmental areas in an individual's life.

Traditionally, the severity of autism has been assessed based on IQ, language acquisition, and behavioural problems (Mehling & Tassé, 2016). These criteria have helped categorise learners with ASD for research and provided prognostic information to caregivers (Rutter, 2011; Weitlauf et al., 2014). Currently, the severity in learners with ASD is primarily evaluated by examining language deficits, cognitive impairment, adaptive behaviour impairment, and challenging behaviours like aggression (Weitlauf et al., 2014).

The Autism Diagnostic Observation Schedule (ADOS; Lord et al., 2012) and the Autism Diagnostic Interview-Revised (ADI-R; Le Couteur et al., 2003) are commonly used measures for assessing core ASD features. However, according to Mehling and Tassé (2016) their scores can vary with IQ and age, which may complicate the assessment of severity.

Intellectual functioning has also been used as a proxy for severity (Di Rezze et al., 2012). However, this approach does not adequately capture the variations in ability and functioning among learners with ASD, as research indicates that the severity of impairment is inconsistent across different domains (Di Rezze et al., 2012). Despite the lack of clear criteria for determining ASD severity, there is a need for a more holistic approach that incorporates the intensity of needed support (Rutter, 2011).

The DSM-5 introduces a new framework by assigning severity ratings based on the severity of support needs in both social communication and restricted/repetitive behaviour categories, marking a shift from focusing solely on impairment levels to considering the intensity of required supports (APA, 2013). Mehling and Tassé (2016) emphasised that supports are resources and strategies that promote independence and quality of life. This approach offers practical information for improving adaptive functioning and overall quality of life (Weitlauf et al., 2014).

The South African education system is structured into three primary categories of schools: mainstream schools, full-service schools, and learners with Special Educational Needs (LSEN) schools (Department of Basic Education, 2014). Mainstream schools are the most prevalent and cater to the general learner population. They offer standard educational programs designed to meet the needs of the average learner, with limited support for learners with disabilities or special needs (Walton, 2018). In contrast, full-service schools aim to be inclusive environments that accommodate a broader range of learning needs. These schools provide additional resources and support services, such as remedial classes and specialised teaching staff, to assist learners who may struggle within the mainstream framework (Department of Basic Education, 2014). LSEN schools, however, are specifically tailored to learners with significant disabilities or special educational needs. These institutions are equipped with specialized facilities, highly trained staff, and individualised educational plans to address the diverse and complex requirements of their students (Walton, 2018). Therefore, this categorisation highlights a continuum of support within the South African education system, ranging from minimal adjustments in mainstream schools to highly specialised interventions in LSEN schools, reflecting the country's commitment to inclusive education.

According to recent epidemiological surveys, the global prevalence of ASD is continuously rising compared to previous studies in this field (Chiarotti & Venerosi, 2020; Onaolapo & Onaolapo, 2018). According to Onaolapo and Onaolapo (2018, p.16), the global prevalence rate, in 2016, of an ASD diagnosis among children was one out of 160 learners. These prevalence rates were determined by reviewing multiple studies globally, including countries in Europe, North America, Western Pacific, South-East Asia, and the Eastern Mediterranean. More recently, studies conducted within the African context (Nigeria and Uganda) provided some data on the prevalence of ASD in Africa, which indicated low prevalence rates of ASD in Sub-Saharan Africa (Onaolapo & Onaolapo, 2018). It is important to contextualise the low prevalence rate within the African context for developing countries such as South Africa. South Africa is a resource-constrained country, particularly regarding healthcare services (Ameen, 2020). This may impact under-reporting of ASD, among other mental health disorders (Ameen, 2020). Statistics provided by the Gauteng Provincial Department of Basic Education also indicated a rise of individuals diagnosed with ASD from 750 in 2015 to 1 847 in 2019 (Ameen, 2020). Therefore, given the marked increase in prevalence rates, it is crucial to understand enablers and constraints to the social integration of those with ASD within mainstream schools.

Learners with ASD are more likely to experience high levels of peer rejection, leading to fractious peer relationships and limited social networks (Symes & Humphrey, 2010; Sissons et al., 2022). Also, learners with ASD are generally at an increased risk of bullying due to varied social and communication differences when compared to neurotypical learners in the same school setting (Cappadocia et al., 2012). Landor and Perepa (2017) add to this statement by stating that these social differences are characterised by social inexperience, social anxiety, and challenges of social engagement. Consequently, these characteristics make individuals diagnosed with ASD susceptible to peer victimisation, leading to instances of bullying, feelings of isolation, and on occasion, school expulsion. A study on ASD in South Africa showed that individuals diagnosed with ASD face barriers to achieving academic success due to challenges in social cognition rather than lower cognitive abilities and lack of cognitive skills (Majoko, 2016; 2023). Hence, those with

ASD are at a higher risk of facing social exclusion in mainstream schools compared to neurotypical learners.

The 2030 Agenda for Sustainable Development emphasises inclusive and equitable quality education (United Nations, 2015). According to Symes and Humphrey (2010), ensuring the integration of learners with ASD into mainstream schools remains one of the most intricate and misinterpreted aspects of instruction. In mainstream schools, active participation and collaboration among learners is expected in class, while unstructured learner-directed play activities are expected outside of class (Symes & Humphrey, 2010). Nonetheless, individuals with ASD encounter notable difficulties with collaboration, confidence, self-management, and controlling impulsivity and internalised emotions (Majoko, 2016). Consequently, those with ASD frequently exhibit reduced responsiveness to inquiries, reluctance in presenting, and/or reluctance to engage in collaborative activities with their peers within the classroom setting. Learners with ASD also require structured play, and therefore peer-directed (unstructured play) presents difficulties to these learners.

The inclusive education movement in southern Africa has also been focussed on enhancing the competency of teachers to provide appropriate instruction for all learners, including those with ASD (Majoko, 2019). The physical integration of learners with ASD is not equivalent to including these learners in social activities. Research has indicated that teachers in mainstream schools face challenges with teaching strategies when individuals diagnosed with ASD are placed in their classrooms (Lindsay et al., 2013). According to Lindsay et al. (2013), teachers in mainstream schools face severe challenges when teaching individuals diagnosed with ASD. These obstacles encompass comprehending ASD and regulating conduct, socio-structural impediments, and fostering a universally accommodating atmosphere. Roberts and Simpson (2016) agree with this statement as they indicate that teachers within mainstream schools lack the necessary knowledge and understanding of ASD when teaching those with ASD. As a result, teachers in conventional schools might feel ill-equipped to provide social, academic, and behavioural assistance to learners with ASD because of inadequate support, training, resources, facilities, and direction (Lindsay et al., 2013). Thus, the lack of training and

guidance can discourage teachers when teaching those with ASD and significantly contribute to learners not achieving their full potential. These challenges are due to teachers being required to create an inclusive classroom environment for these learners with little or no guidance. In addition, as some individuals diagnosed with ASD display repetitive behaviours, teachers have difficulty understanding and accommodating these behaviours when implementing their teaching strategies to improve social inclusion among other learners.

As research continues to expand on interventions designed to help learners diagnosed with ASD adapt to the school setting, the social incorporation of individuals diagnosed with ASD in mainstream school settings has been given less attention. The social incorporation of those with ASD in mainstream schools is challenging for both learners and teachers. However, it is assumed that with the necessary training, provision of adequate resources and support for teachers, the social integration of learners with ASD is possible. It is therefore of utmost importance to investigate various strategies and interventions to ensure adequate and full social incorporation of those with ASD in mainstream public schools in South Africa.

1.3 Problem statement

The increasing prevalence of ASD among learners globally, and particularly in South Africa, presents significant challenges within mainstream educational settings. Learners with ASD frequently face peer rejection, bullying, and social isolation due to their social communication differences and repetitive behaviours, which mainstream school environments are often ill-equipped to manage effectively. Despite the inclusive education movement's emphasis on integrating all learners, teachers in South African mainstream schools lack the necessary training, resources, and support to adequately address the unique needs of learners with ASD, leading to their social and academic exclusion. This gap is further exacerbated by the lack of a holistic approach to assessing and supporting learners with ASD, focusing solely on impairment levels rather than the intensity of needed supports. Consequently, there is an urgent need to investigate the specific facilitators and barriers to the social integration of learners with ASD in mainstream

primary schools in the Tshwane region of Gauteng, South Africa, to develop effective strategies and interventions for their inclusion.

1.4 Purpose of the study

The study seeks to investigate facilitators and barriers to the social embracement of individuals diagnosed with ASD in mainstream schools in the Tshwane region of Gauteng, South Africa. Teachers and learners with ASD will be asked to comment on the facilitators and barriers to social inclusion to examine these perceived facilitators and barriers. Interviews will be conducted with teachers regarding their social experiences, including those with individuals diagnosed with ASD in their classrooms. To ensure that each participant's voice is provided a platform, those with ASD will be asked to participate in a semi-structured interview regarding their experience of social inclusion at their school. From their responses, strategies that can be used to successfully include those with ASD in social activities in primary mainstream schools in the Tshwane region of Gauteng can be gleaned. This study's additional aim is to conduct a systematic review of literature based on learners with ASD in South Africa. This will allow for an in-depth understanding of the current context of the social incorporation of individuals diagnosed with ASD in South Africa.

1.5 Main research question

What are the facilitators and barriers to social inclusion for learners with ASD in mainstream schools in Tshwane?

1.6 Sub-research questions

- a) What are the barriers to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane?
- b) What are the facilitators to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane?
- c) What are teachers' experiences concerning the barriers to social incorporation of learners with ASD in mainstream schools in Tshwane?
- d) What are teachers' experiences concerning the facilitators to social incorporation of learners with ASD in mainstream schools in Tshwane?

- e) What are social inclusion teaching strategies used to include learners with ASD in social activities in mainstream schools in Tshwane?

1.6.1 Research objectives

- i) To explore the barriers to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane.
- ii) To explore the facilitators to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane.
- iii) To explore teachers' experiences concerning the barriers to social incorporation of learners with ASD in mainstream schools in Tshwane.
- iv) To explore teachers' experiences concerning the facilitators to social incorporation of learners with ASD in mainstream schools in Tshwane.
- v) To explore social inclusion teaching strategies used to include learners with ASD in social activities in mainstream schools in Tshwane.

1.7 Working assumptions

Based on the literature reviewed, individuals diagnosed with ASD are at a higher risk of being left out of social activities compared to their neurotypical counterparts. as they face various challenges with social interactions, social relationships, and communication skills. Therefore, their neurotypical peers may find it difficult or impossible to understand and/or communicate with them, resulting in the social exclusion of those with ASD in conventional educational settings.

Furthermore, it can be assumed that mainstream schools have limited or no resources and/or facilities to socially support learners with ASD, as many of these learners are observed to attend special needs schools rather than mainstream public primary schools. According to the literature, teachers in these mainstream schools face challenges due to the lack of training and/or experience needed to support those with ASD in the classroom (Lindsay et al., 2013). During this research study, I will confirm the assumptions mentioned above and identify adequate teaching strategies which can be used to support individuals diagnosed with ASD in mainstream primary schools.

1.8 Concept clarification

Social inclusion: A study conducted by Simplican et al. (2015) underscores the intricate nature of the concept of social inclusion, which may be synonymous with social integration, networking, community involvement, and social resources. Hence, these researchers delineate social inclusion as the intersection of two crucial spheres of life: interpersonal connections and involvement in the community. Furthermore, the World Bank Group (2021) defines social inclusion as improving how disadvantaged individuals and groups partake in society and improving their abilities, opportunities, and dignity. Thus, during this study, social inclusion will be defined as the incorporation of individuals diagnosed with ASD in mainstream primary school activities.

Autism spectrum disorder (ASD): This is a neurological developmental condition that presents multiple challenges across various developmental areas in an individual's life (Angus & Monson, 2014). Hodges, Fealko and Soares (2020) agree with the above definition as they characterise ASD as a brain development-related disorder marked by deficiencies in interpersonal interaction, narrow interests, and iterative behaviours among individuals. Therefore, during this study, ASD will be defined as a neurodevelopmental disorder that causes deficits in learners' social and communication development, resulting in the social exclusion of these learners in mainstream primary schools. The severity in learners with ASD is primarily evaluated by examining language deficits, cognitive impairment, adaptive behaviour impairment, and challenging behaviours like aggression (Weitlauf et al., 2014). This approach, while useful in understanding individual challenges, does not fully capture the day-to-day social and educational experiences of these learners in mainstream school settings. To address this gap, the study was conducted in two mainstream schools to provide a detailed examination of how these factors impact the social integration and inclusion of learners with ASD in typical educational environments. This setting allowed for a closer investigation of real-world interactions, barriers, and facilitators affecting learners with ASD, offering practical insights into the effectiveness of current evaluation methods and the support needed for better inclusion practices.

Mainstream school: According to UNESCO (2021), a mainstream school can be defined as a school which includes learners with special educational needs in classrooms with typically developed peers. Khumalo and Hodgson (2017) agree with the definition mentioned above as they define a mainstream school as an ordinary neighbourhood school which accommodates all learners, including those with special educational requirements. Thus, during this study, a mainstream school will be defined as an ordinary primary school that accommodates all learners' educational, social and emotional needs, including those with ASD.

1.9 Theoretical framework

Social constructivist theory is a widely used social learning theory developed by the renowned educational psychologist Lev Vygotsky. Vygotsky (1978) theorised that knowledge is actively constructed and that a learner's cognitive development depends on social interactions (Akpan & Kennedy, 2020; Topçiu & Myftiu, 2015). One of the critical components of Vygotsky's work is the Zone of Proximal Development (ZPD), which focuses on learners' cognitive development with the necessary support and guidance of a more knowledgeable other and/or a peer (Topçiu & Myftiu, 2015). McLeod (2007) posits that the ZPD also encourages socialisation amongst peers and teachers, increasing learners' cognitive development in the classroom. Similarly, Topçiu and Myftiu (2015) argue that Vygotsky's work focuses on the learner's interaction with society, the impact of social interactions, language, and the learning culture. Therefore, it can be surmised that the ZPD emphasises social inclusion and variance in promoting all learners' cognitive development.

Conceptualisations of the incorporation of learners with ASD focus predominantly on classroom instruction and the role of the teacher. However, alternative theoretical perspectives are necessary for addressing the inclusion of learners with neurodiversity (Mallory & New, 1994). Therefore, the social constructivist theory is well-suited to the South African context as it pertains to individuals diagnosed with ASD as a framework for inclusive practices by emphasising the sociocultural context.

Thus, in this study, the social constructivist theory was used to explore enablers and constraints to the social incorporation of those with ASD in mainstream classrooms. This

theoretical framework was specifically used as it emphasises the importance of the social interactions of learners and the social impact these interactions have on cognitive development and emotional well-being. This allowed for the study to explore various issues surrounding diversity, inclusion, and the role of social activity, including classroom instruction, as it pertains to the facilitators and barriers to the social incorporation of those with ASD in mainstream classrooms.

1.10 Paradigmatic perspectives

1.10.1 Epistemology

During this research study, an interpretivist paradigm was used to gather and obtain data. This paradigm was used as it allows for an interpretation of the world through multiple perceptions and experiences of various participants (Thanh & Thanh, 2015). Furthermore, interpretivism seeks to understand a specific context and generally believes that reality is socially constructed (Thanh & Thanh, 2015). Therefore, the current study did not aim to obtain answers from participants in a rigid manner but rather to obtain and understand participants' experiences regarding the facilitators and barriers to social inclusion from the perspectives of learners with ASD and teachers, as this is seen to be a more accurate and comprehensive reflection of their experiences.

1.11 Methodology

In this study I used a qualitative research approach to gather data from various participants. According to Alase (2017), a qualitative research approach allows the researchers to engage with participants to explore, investigate and understand individual experiences. Thus, this study aimed to engage with teachers in mainstream schools to explore and understand their experiences regarding enablers and constraints to the social incorporation of individuals diagnosed with ASD in their classrooms. Furthermore, this study engaged with those with ASD to explore their experiences regarding enablers and constraints to social inclusion and suggestions on how to be socially included within the classroom. Therefore, this study used individual semi-structured interviews and self-constructed questionnaires with the teachers and learners, respectively, to obtain data

with respect and sensitivity. The methodology section will be discussed thoroughly in Chapter 3.

1.12 Research methodology

1.12.1 Research design

A phenomenological research design was used to collect data during this research study. According to Wilson (2015) phenomenological research delves into the exploration of how individuals perceive and comprehend their world as genuinely significant or meaningful. The aim of phenomenology is therefore to gain insights into the human experience (Wilson, 2015). Worthington (2013) agrees as he indicates that phenomenology focuses on the essential aspect of an individual's meaning as the core element of the human experience. Thus, phenomenology focuses on a specific experience or what a person perceives, rather than delving into individual life histories, societal conventions, or attitudes, although these factors may naturally come into play (Wilson, 2015).

Phenomenological research can be confusing as it is rooted in a philosophical framework that forms the foundation of qualitative research. It also serves as a specific qualitative methodology for uncovering the fundamental structure of shared essences within a social phenomenon. The most important findings obtained by phenomenology are understanding of the experiences lived by the individuals (Worthington, 2013). Therefore, a phenomenological research design is highly suitable for examining emotional, affective, and frequently intense human experiences (Merriam & Tisdell, 2015). The referenced authors characterise a fundamental qualitative research study as grounded in the philosophical foundations of constructivism, phenomenology, and symbolic interactionism. Such research is employed by researchers who aim to investigate three key aspects: how individuals interpret their experiences, how they construct their perceptions of reality, and the significance they assign to their experiences. The overarching objective is therefore to gain insight into how people derive meaning from their lives and experiences.

The benefits of using a phenomenological research design are that it delves into the profound human elements of a situation, focussing on emotions, sensations, and mood. This deeper understanding has the potential to empower both the researcher and the participants (Wilson, 2015). Wilson (2015) further indicates that it is important to understand that phenomenological research is not designed to generate theoretical frameworks. It requires a significant level of personal involvement from all participants, and trust can sometimes be a constraining factor in this process.

1.12.2 Research site

The study took place in two Afrikaans-medium public primary mainstream schools located in the Tshwane District of Gauteng. Both learners and teachers belonged to the respective schools, ensuring convenient access for participants, parents/guardians, and teachers alike. The researcher travelled to the schools at appointed times, equipped with all necessary materials to carry out the research.

1.12.3 Delimitations of the study

The delimitations of this study include geographical scope as the research was limited to two Afrikaans-medium mainstream public primary schools located within the Tshwane District of Gauteng, thus restricting the generalisation of findings. Participant selection was also a delimitation as participants consisted of learners and teachers from the same school per site, potentially limiting the diversity of perspectives and experiences represented in the study to those specific school environments. Accessibility was a further delimitation as the sites chosen for the study were easily accessible to participants and parent(s)/guardian(s), facilitating their involvement in the research process; however, this may have excluded individuals from schools outside of the selected districts. Furthermore, the researcher's presence could be seen as a delimiter as the researcher commuted to the schools at scheduled appointment times with necessary materials, which could have influenced participant responses and interactions due to the researcher's presence during data collection.

1.12.4 Sampling/selection of participants

Following ethics approval from the research ethics committees of the Faculty of Education, University of Pretoria, and permission from the Department of Basic Education (see Appendix A), a purposive sampling technique was used to gather data. A purposive sampling technique refers to a sample that has been chosen for a reason or a 'purpose'. As such, the sample was used to logically represent the population within the study (Madden, 2022). Data was collected from two mainstream primary schools in the Tshwane region, both of which use Afrikaans as the language of learning and teaching (LOLT). The sample included four teachers, two from each school, who were interviewed, and two learners with ASD, from one school, were asked to participate in a semi-structured interview. As learners in the intermediate phase were targeted, the learners with ASD varied between 10 to 13 years of age. Thus, a purposive sampling technique was the most suitable to describe the enablers and constraints to the social incorporation of those with ASD in mainstream primary schools and to ascertain strategies that could be used to successfully socially include individuals diagnosed with ASD in mainstream primary schools.

1.12.5 Data collection and documentation

Data collection refers to the methodical gathering of information, facilitating the exploration of research inquiries, hypothesis testing, and evaluation of desired outcomes (Marks & Yardley, 2003). Bhandari (2020) agrees with this statement as he defines data collection as a systematic process of gathering observations that allows the researcher to gain knowledge of their research problem. Thus, data collection can be defined as gathering information using specific data collection instruments to answer the research questions and gain knowledge of the research problem. In line with this, data were collected through a self-constructed open-ended questionnaire during this research study. For learners, the verbal self-constructed open-ended questionnaire collected details regarding the participants' age and grade only. For teachers, the self-constructed open-ended questionnaire collected details regarding the current grade/s taught, number of years in the profession as a teacher, and the number of individuals diagnosed with ASD taught. The semi-structured interviews were research instruments containing questions used to collect information from selected participants. Semi-structured interviews (see

Appendix B) were conducted with the mainstream primary school teachers, based on their experiences teaching those with ASD and what strategies were already in place to support the social inclusion of these learners in their classrooms. These teachers were also asked to comment on the perceived facilitators and barriers to the social incorporation of learners with ASD in mainstream schools.

Research indicates that children usually provide more accurate information when they are freely narrating rather than when they are being asked direct structured questions (Garbarino, 1989; Vasquez, 2000). Therefore, a semi-structured interview (see Appendix C) was used to explore learners' with ASD's perceptions of the social inclusion barriers and facilitators these learners faced daily in mainstream primary schools. The interview explored the learners' experiences. To ensure that the data collection process was accessible, accommodations such as the use of scribes were made available to support these learners in completing the self-constructed open-ended questionnaire. Additionally, the data collected through these semi-structured interviews provided valuable information and were used to answer the sub-research questions regarding their experiences. Thus, the semi-structured interviews were the most suitable research instruments to collect data for this specific study as they were used to collect specific data for a specific purpose: to establish what strategies could be used to socially include those with ASD in mainstream primary classrooms.

The advantages of this data collection method are exploring various perspectives within a community, gaining a better understanding and appreciation of their different values, beliefs, and assumptions, and providing an open-ended platform for participants to raise various issues (Choy, 2014). However, the disadvantages of this method are that it can be time-consuming and, therefore, essential issues or themes can be overlooked, and data results are not objectively verifiable and require a labour-intensive analysis process such as categorising and recording data (Choy, 2014). To overcome these disadvantages, I will utilise member checking to validate the data and ensure the credibility of the findings.

1.12.6 Data analysis and interpretation

During this study, thematic content analysis was used to analyse and organise the data collected. Thematic content analysis refers to the organisation of the differences and similarities within the data (Fugard & Potts, 2019). These differences and similarities are categorised into different themes or ideas. Organising the observations of the data collected in this study helped me to identify patterns within the data, and thus, I was able to make inferences about the data provided by the participants in the proposed study. As outlined by Braun and Clarke (2012), the thematic content analysis method comprises six stages: becoming acquainted with the data, creating initial codes, identifying themes, evaluating potential themes, defining and labelling the themes, and finally, generating the report. As such, a thematic approach was the most suitable approach for this study as it is a very flexible approach and offered a more accessible form of analysis, especially for new and young researchers (Nowell et al., 2017). Furthermore, this approach was easily understood and quick to learn as there are only six phases to be followed. Thus, thematic content analysis was instrumental when reviewing various participants' opinions and perspectives to determine similarities and differences and to generate valuable insights. The content of the responses received from the semi-structured interviews with the teachers and self-constructed open-ended questionnaires with the learners with ASD were categorised into factors relating to facilitators and barriers using thematic content analysis.

1.13 Ethical considerations

Several ethical considerations should be considered to ensure a research study is ethical. Ethical considerations such as informed consent, no harm, anonymity, confidentiality, and voluntary participation need to be considered when conducting research (Connelly, 2014). As part of ethical considerations, ensuring trustworthiness, credibility, and reliability in the research process is paramount. According to Gunawan (2015) trustworthiness entails establishing transparency and honesty in all aspects of the study, from data collection to analysis and reporting, fostering a sense of confidence and integrity among participants. Credibility involves demonstrating the validity and accuracy of the research findings through rigorous methodologies, such as the triangulation of data sources or member checking, to enhance confidence in the study's results (Cope, 2014).

MacPhail et al. (2016) state that reliability is achieved by maintaining consistency and dependability in research procedures, ensuring that the study can be replicated or validated by other researchers, thereby strengthening confidence in the research outcomes. Overall, prioritising trustworthiness, credibility, and reliability upholds ethical principles and enhances the quality and integrity of the research study.

As learners with ASD are considered a vulnerable population group, ethical considerations such as assent from the learners (see Appendix D), informed consent from the parents/guardians and teachers (see Appendix E and F), voluntary participation of all participants, and protection of participants and confidentiality was ensured when the research was conducted. Thus, all participants were informed in a manner that is accessible of the purpose of the study, what was required of them, and that all personal information, such as their identities, would be kept confidential, which empowered them to decide whether to engage in this study with full information. The identities of the GDE officials, educational institutions, headmasters, guardians, teachers, and learners engaged in the investigation will be withheld from the research title, report, and summary.

Potential participants were invited to take part in the study and were notified that their participation was voluntary. Upon agreeing to participate in the study, participants were informed that they had the option to withdraw at any point without any consequences if they felt uncomfortable. Furthermore, I ensured that participants would not be harmed in any way during their participation. I also ensured that participants were always comfortable and that I would not cause any stress to them. The topic of social inclusion might have caused distress to the learners, so a counsellor was made available to these learners, should there have been a need.

1.14 Outline of chapters

Chapter 1 outlines the problem statement and justification for the study, along with defining commonly used terms and clarifying abbreviations. In Chapter 2, a comprehensive examination of literature regarding the integration of those with ASD into

mainstream primary school social contexts is provided, along with an outline of the theoretical framework employed in this investigation.

Chapter 3 thoroughly examines the research design and methodology implemented in this study. An introduction to the research paradigm and approach will set the foundation for understanding how data was obtained and gathered. The discussion will encompass the research design, the process of sampling and participant selection, as well as the techniques employed for data collection and the strategies for subsequent data analysis. Ethical considerations will be defined and explained thoroughly to provide a comprehensive overview of the methodology adopted in this research study.

Chapter 4 offers an examination and interpretation of data obtained through individual face-to-face semi-structured interviews with teachers and self-constructed open-ended questionnaires filled out by learners with ASD. The collected data will be structured into themes and sub-themes to highlight commonalities and distinctions among participants, fostering a holistic comprehension of social inclusion dynamics within these educational settings.

Chapter 5 thoroughly discusses the findings that were analysed in Chapter 4. The discussion of these findings is guided by the theoretical framework and the literature reviewed in this study. The findings will be explored within their respective themes, as analysed in Chapter 4.

1.15 Summary

This chapter introduces the dissertation, outlining the problem statement, rationale for the research, and purpose of the study. The prevalence of Autism Spectrum Disorder (ASD) is discussed. The research questions and objectives are outlined, focussing on understanding the barriers and facilitators to social inclusion for individuals diagnosed with ASD. The working assumptions, including the likelihood of social exclusion for those with ASD and the challenges faced by mainstream schools in supporting these learners, are presented. Concepts are clarified in this chapter, and the theoretical framework of social constructivism is introduced, emphasising its relevance to inclusive practices for

learners with neurodiversity. The chapter concludes with an outline of the subsequent chapters.

Chapter 2: Literature review

2.1 Introduction

This chapter reviews existing literature to understand the key factors of the social incorporation of those with ASD. It begins with an exploration of the prevalence of ASD globally and in the context of South Africa, followed by a comprehensive review of the literature. The literature review will thoroughly discuss and investigate the social challenges and characteristics of individuals diagnosed with ASD, the challenges teachers face in the social incorporation of learners with ASD, and the current teaching strategies aimed at improving the social incorporation of those with ASD in mainstream schools. Thereafter, the theory of the social constructivist and inclusive education theories are used as a framework to guide this research study. This chapter concludes with a summary of the literature review and identifies gaps in the literature.

2.2 Prevalence of ASD globally and in South Africa

Rogers and Vismara (2008) highlight the increasing prevalence of ASD as a significant challenge in school environments. This trend underscores the necessity to enhance diagnostic capabilities for ASD among community-based paediatricians and primary care providers (American Psychiatric Association, 2022). While some children can be diagnosed with ASD by the age of 2, many are not diagnosed until they are four or five years old. Clinical guidelines recommend a multidisciplinary team approach to ASD diagnosis, but the waiting times for such evaluations can be quite long, often exceeding a year (American Psychiatric Association, 2022).

As per the American Psychiatric Association (2022), addressing this challenge requires expanded training for paediatric healthcare providers to diagnose fewer complex cases of ASD. This directive offers suggestions, tools, and support materials to aid community-based paediatric clinicians in conducting or supporting ASD diagnostic evaluations. Furthermore, it offers advice on referring children for comprehensive needs assessments for treatment and intervention planning, advocating for a versatile multilevel approach (American Psychiatric Association, 2022).

The diagnostic criteria for ASD, according to the article 'Autism Speaks' (2014; n.p.) include the ongoing difficulties in social communication and interaction across different situations, which may be evident under three categories. The first involves challenges in social-emotional reciprocity, encompassing abnormal social approaches, difficulties in engaging in typical back-and-forth conversations, reduced sharing of emotions or interests, and problems initiating or responding to social interactions. The second category involves difficulties with non-verbal communicative behaviours used in social interactions, including difficulties in blending spoken and non-spoken interaction, abnormalities in visual cues and physical gestures, struggles with understanding and using gestures, or a complete absence of facial gestures and non-spoken interaction. The third category involves challenges in forming, sustaining, and comprehending relationships, such as difficulty adjusting behaviour in different social contexts, problems with imaginative play or making friends, or a lack of interest in peers.

The current severity levels are assessed based on the degree of deficits in social communication and the presence of restricted repetitive behaviours. These include restricted and repetitive behaviour patterns, interests, or activities, with a minimum of two of the following, either currently or historically: (a) repetitive or stereotyped physical actions, manipulation of objects, or speech (e.g., simple repetitive movements, arranging items, echoing phrases); (b) insistence on consistency, inflexible adherence to schedules, or ritualized behaviours or speech patterns (e.g., significant distress over minor alterations, challenges with changes, rigid thought processes, specific greeting routines, or a dependence on daily rituals.); (c) intense, narrow, and unusual interests (e.g., strong attachment to or preoccupation with unusual objects, excessive focus on particular topics or activities); (d) increased or decreased sensitivity to sensory stimuli or unusual focus on sensory aspects of the surroundings (e.g., apparent lack of response to pain or temperature, negative reactions to certain sounds or textures, excessive smelling or touching of objects, fascination with lights or motion) (Autism Speaks, 2014, p.1).

According to recent epidemiological surveys, the global prevalence of ASD is continuously increasing (Chiarotti & Venerosi, 2020). Since the initial ASD prevalence study in 1966, there has been a significant and consistent rise with the first report

indicating an estimate of less than 0.5% (Lotter, 1966). According to Ameen (2020, p. 27), the current prevalence rate for ASD indicates that approximately one in every 59 children receives a diagnosis of ASD. Ameen (2020, p. 27) elaborates that autism impacts approximately 1-2% of children globally, with a male: female ratio of 3-4:1. The occurrence of autism with intellectual impairment is reported in a ratio of 1:2, while autism without intellectual impairment is observed in a ratio of 9-10:1.

Studies on prevalence indicate that there is a rising trend of ASD rates in high-income countries (HICs) across the globe while there are comparatively lower rates of ASD in low- and middle-income countries (LMIC), although these rates are also rising (Pillay et al., 2021). According to De Vries (2016), numerous factors contribute to the comparatively lower prevalence of ASD documented in LMIC so far. These factors may include limited awareness, social stigma, diagnostic overshadowing, difficulties in accessing healthcare services, and a lack of research in the field. De Vries (2016) argues that the lower prevalence rates observed in LMIC were most likely a result of under-reporting rather than being indicative of genuinely reduced rates of ASD in these regions of the world.

Thus far, little ASD research has been conducted in sub-Saharan Africa (SSA) (Pillay et al., 2021). More recently, studies conducted within the African context (Nigeria and Uganda) provided some data on the prevalence of ASD in Africa, indicating comparatively low prevalence rates of ASD in SSA (Onaolapo & Onaolapo, 2018, p. 16). South Africa, the most extensive nation in southern Africa, boasts a population of around 58.78 million individuals (Statistics South Africa, 2019, p. 6). These statistics suggest that roughly 28.8% of the populace comprises children under the age of 15 years. According to Pillay et al. (2021), with an estimated prevalence of 1% (similar to the prevalence rates in Nigeria and Uganda), it can be projected that around 169 286 children under the age of 15 may have ASD and could potentially benefit from health, education, and other related services.

It is important to contextualise the low prevalence rate. South Africa is a resource-constrained country, particularly in terms of health care services (Ameen, 2020). This may affect the under-reporting of ASD, among other mental health disorders. Statistics provided by the Gauteng Provincial Department of Basic Education also indicate an

increase of learners with ASD from 750 in 2015 to 1 847 in 2019 (Gauteng Department of Basic Education Quarterly Report, 2019, p. 2). Therefore, given the marked increase in prevalence rates, it is crucial to understand the incorporation of individuals diagnosed with ASD in the South African basic education system as well as the facilitators and barriers to the social incorporation of those with ASD in mainstream schools.

2.3 Social challenges and characteristics of learners with ASD

The incorporation of learners with ASD in mainstream educational settings has increased over the past few decades. However, concerns remain about the quality of their experiences within these mainstream settings, especially regarding their social participation experiences (Mamas et al., 2021). Locke et al. (2019) similarly indicate that an increasing number of learners diagnosed with ASD are being integrated into regular educational settings alongside their typically developing peers. The aim of inclusion, which is to enhance learners' interactions with typically developing peers, is still a concern as individuals diagnosed with ASD frequently find themselves on the outskirts of their classrooms' social circles, and as they grow older, their engagement in social activities decreases.

Social engagement encompasses favourable social interactions between those with ASD and their peers, their acceptance within the peer group, the formation of social connections or friendships with classmates, and the learners' sense of being embraced and included by their peers (Mamas et al., 2021). Locke et al. (2017) emphasise that social challenges stand out as a particularly difficult primary limitation that hampers the ability of those with ASD to form peer relationships in the school environment. The social exclusion of individuals diagnosed with ASD in mainstream primary schools is a significant concern for both parents and teachers (McConkey, Cassin & McNaughton, 2020). Unnecessary strain is placed on the family when their children have no or few friends and are excluded from social activities due to their social limitations. Social challenges such as social impairments, communication barriers, and behavioural challenges are all identified as reasons for the social exclusion of those with ASD in mainstream schools (Majoko, 2016). Thus, it is vital to understand each social challenge that learners with ASD may experience to ensure social inclusion.

2.3.1 Social interactions

Social interactions and social relationships are one of the most common challenges faced by those with ASD. Learners with ASD often use simpler descriptions to identify their friends than their typically developing peers, have fewer friends, and experience greater challenges in intimacy and conflict resolution (Bennett et al., 2018). Moreover, individuals diagnosed with ASD often experience feelings of loneliness and struggle to navigate social interactions leading to challenges in establishing and maintaining friendships (Bennett et al., 2018). Angus and Monson (2014) indicate that impairments in social interactions can be shown through difficulties growing social friendships at a developmentally appropriate level. Impairments in social interactions can also be noticed through both the lack of understanding and use of non-verbal communication. Mamas et al. (2021) similarly indicate that individuals diagnosed with ASD experience challenges such as with being aware of other people's feelings, as well as with verbal and non-verbal communication skills. Additionally, difficulties with social and emotional reciprocity, as well as empathy, may also cause barriers within social interactions (McConkey, Cassin & McNaughton, 2020).

Learners with ASD understand and describe friendships differently but this does not necessarily act as a barrier to forming friendships. However, they tend to have fewer friends than their neurotypical peers, with boys experiencing more difficulties in making friends, while girls face more challenges in navigating conflict (Bennett et al., 2018). Girls with ASD appear to have more social and communication skills than neurotypical boys, but less than neurotypical girls (Bennett et al., 2018), while boys with ASD may face challenges in establishing friendships and often prioritise shared interests (Bennett et al., 2018), but developing friendships involves mutual understanding and communication. However, social skills interventions typically focus solely on the learner with ASD and may not address the core skills required for relationships.

2.3.2 Communication barriers

Communication is a challenge faced by those with ASD (Angus & Monson, 2014) as it is extremely important in all daily life situations and is a key component in all relationships. Learners with ASD who present with limited expressive and receptive

language abilities may face challenges in environments that require pragmatic language skills (American Psychiatric Association, 2022). Many individuals diagnosed with ASD tend to be precise about minor details or rules, have unusual prosody, and often make literal interpretations during conversations (American Psychiatric Association, 2022). They may also face difficulties with general conversational rules, getting lost in detail, and losing the overall point of the conversation when listening and/or replying (Angus & Monson, 2014). Thus, learners with ASD face real difficulties in communicating with their peers and teachers, which results in them being isolated and excluded from many social activities in mainstream schools.

2.3.3 Characteristics of ASD

Learners with ASD display various specific characteristics such as restricted interests, repetitive behaviours, stereotyped behaviour, and hyper- and hyposensitivity, which need to be considered when ensuring the social inclusion of these learners in mainstream South African schools (Angus & Monson, 2014). Learners with ASD may also show characteristics such as poor fine and gross motor skills, which may include general clumsiness and poor handwriting (Angus & Monson, 2014). Also, these learners may experience difficulty in adaptive functioning such as personal health care and independency. Salceanu (2020) mentions additional characteristics, such as seclusion, avoidance of eye contact, absence of facial expressions, repetition of words (echolalia), challenges with proper sentence structure, struggles in conveying emotions, peculiar responses, displays of aggression, distress or frustration due to environmental alterations, distinctive motor behaviours, varied responses to sensory stimuli, and overall sub-par academic performance. High rates of anxiety and depression have also been reported among those with ASD (Bennett et al., 2018).

2.4 Challenges faced by teachers in the social inclusion of learners with ASD

Teachers play a crucial but often overlooked role in influencing the social development of learners in their classroom. They have two main functions: firstly, as authorities, they teach and reinforce social norms and expected behaviour, and secondly, they act as facilitators of social interactions between learners and peer dynamics. Teachers shape the classroom environment, setting expectations for peer interactions and communication

(Fujii, 2014). Thus, they can adapt interactions to support learners struggling socially and promote engagement for all learners.

With the rising number of learners with ASD in mainstream primary schools, teachers are tasked with establishing an inclusive educational setting, often lacking adequate guidance on the process. In fact, several research studies indicate that teachers in mainstream schools struggle to meet the needs of those with ASD (Humphrey & Lewis, 2008; Symes & Humphrey, 2010). According to Lindsay et al. (2013), teachers within mainstream schools face severe challenges when teaching individuals diagnosed with ASD. These challenges include a lack of understanding of ASD and managing ASD behaviour, socio-structural obstacles like insufficient training, resource availability, school policies, and difficulties in fostering an all-encompassing atmosphere. Roberts and Simpson (2016) similarly indicate that teachers in mainstream schools lack the necessary knowledge and understanding of ASD when teaching individuals diagnosed with ASD. Furthermore, these researchers indicate that the primary challenges encountered when teaching those with ASD were behavioural challenges and instances of unsuitable social behaviours. It has consistently been shown that issues related to learner behaviour play a significant role in increasing teacher stress, thereby diminishing teaching effectiveness, and deteriorating the quality of student-teacher relationships (STRs) (Bolourian et al., 2022).

Teachers' viewpoints on inclusive education differ and are influenced by factors across various environmental contexts (for example, within and outside the classroom). These aspects encompass learner-related factors, school-related elements, broader cultural and societal influences, and even characteristics specific to the teachers themselves (Donohue & Bornman, 2015). Research indicates that teachers who possess advanced education and inclusive training typically harbour more favourable attitudes towards learners with disabilities. (Avramidis & Kalyva, 2007; Forlin et al., 2009), while older instructors often express more negative perspectives on inclusivity (Bornman & Donohue, 2013). School-based factors, such as available resources and the level of support provided to teachers, can also influence attitudes regarding the integration of learners with ASD into classrooms (Lindqvist & Nilholm, 2013). Moreover, the nature and severity

of the learner's disability may affect teacher perceptions, potentially impacting teacher efficacy and confidence in addressing learning challenges. Hence, teachers' perspectives on inclusive education are intricate and shaped by numerous factors across diverse environmental tiers, including aspects related to learners, schools, society, and individual teachers. These factors, which include teacher training, age, school resources, and the nature of the learners' disabilities, all play a significant role in shaping attitudes towards inclusive practices.

Weber (2013) highlights that insufficient teacher skills in mainstream schools represent a significant obstacle to educating those with ASD in their classrooms. As per Ntombela (2006), South African teachers have received training based on the outdated model of special and regular education. Consequently, teachers have not been adequately prepared to address the diverse learning needs of learners. Donohue and Bornman (2015) second this statement as they indicate that current teacher training in South Africa focusses on addressing the requirements of a wide-ranging learner population. However, past training emphasised the differentiation between teachers teaching mainstream and special classes. In essence, teachers were prepared to teach either typically progressing learners or those with distinctive needs, but not both (Donohue and Bornman, 2015). As a result of this previous educational approach, numerous South African teachers now face the challenge of having to educate learners with diverse educational needs and learning barriers, despite having no relevant prior experience or training. Teachers have also reported a lack of personal development and a need to understand these barriers and how to address these barriers to learning in their classrooms (Engelbrecht, Oswald & Forlin, 2006). Moreover, Weber (2013) further states that overcrowded classrooms and a lack of support within classrooms are another challenge faced by teachers when teaching individuals diagnosed with ASD in their classrooms. Aiding teachers can play a crucial role in shaping their perspectives on inclusive education especially given that the educational requirements of those with ASD can be intricate and diverse, often extending beyond the resources typically available in a standard South African classroom (Donohue & Bornman, 2015). Therefore, teachers in mainstream schools may feel unprepared to support learners with ASD socially, academically, and behaviourally due to lack of support, training, resources, facilities, and

guidance (Lindsay et al., 2013). Consequently, the lack of training and guidance can discourage teachers when teaching individuals diagnosed with ASD and significantly contribute to learners not achieving their full potential.

2.5 Current teaching strategies for the social inclusion of learners with ASD in mainstream schools

When considering strategies for teaching individuals diagnosed with ASD to increase their social inclusion, it is imperative to understand that ASD is a spectrum disorder and affects learners differently. Teaching those with ASD raises concerns in various developmental areas such as interpersonal engagement, spoken and non-spoken communication, imaginative play, and sensory processing (Lindsay et al., 2014). Therefore, it is crucial for teachers to have successful strategies in place when including these learners in their classrooms. According to Ameen (2020), teaching strategies can be divided into three main categories: social and communication difficulties, repetitive/stereotyped behaviour, and classroom structure. Each of these will be discussed below.

2.5.1 Social and communication difficulties

When teaching learners with ASD, teachers can use three basic approaches to improve their learners' social and communication skills. These approaches include a visually-based approach which is used for learners who are non-verbal, a combination of visual- and auditory-based approaches and by using gestures, and sign language (Ameen, 2020). Salceanu (2020) emphasises the importance of cultivating instinctive communication skills including voice tone, rhythm, gestures, posture, and suitable visual engagement when engaged in direct person-to-person dialogue, constructing a cognitive framework for effective speech interaction; fostering the drive to engage with unfamiliar individuals across various conversations; and nurturing cognitive growth. Teaching strategies such as the Picture Exchange Communication System (PECS), power cards, social stories, Makaton, DIR/Floortime, Lego therapy and Virtual Reality (VR) technology are highly recommended when teaching individuals diagnosed with ASD.

2.5.1.1 The Picture Exchange Communication System (PECS)

The Picture Exchange Communication System (PECS) is an alternative communication method that enables two-way communication (Bondy & Frost, 2014). This is an instructional teaching strategy that has proven to be very successful when teaching those with ASD in South Africa, especially in Gauteng (Ameen, 2020). The PECS method benefits learners with little or no verbal communication skills, as it is a form of communication that does not rely on words. Therefore, these learners are taught to communicate using pictures. Furthermore, this method is taught in a structured environment and teaches learners with ASD to make a request for the desired item. This can be a long process, but is extremely beneficial for teachers and families teaching learners with little or no functional speech and basic communication skills (Tincani & Devis, 2011; Sulzer-Azaroff et al., 2009). Furthermore, positive outcomes such as improvements in social communicative behaviours and a decrease in problematic behaviours among those with ASD are clearly visible when making use of this teaching strategy (Ameen, 2020).

2.5.1.2 Power cards

Power cards are another effective teaching strategy that can be used to enhance the social communication behaviour of those with ASD. According to Gagnon (2002), power cards can aid individuals with ASD in comprehending their social environments, routines, language nuances, and implicit curriculum. Power cards in education typically consist of small, portable cards featuring key strategies, reminders, or visual cues tailored to individual learners' needs, helping them navigate challenges and reinforce positive behaviours through a personalised and accessible format.

2.5.1.3 Social stories

Social stories are an evidence-based teaching strategy that can be used to improve communication and social impairments present in individuals diagnosed with ASD. Social stories can be seen as individualised short stories which describe a specific social situation experienced by those with ASD. Therefore, the purpose of these stories is to help learners with ASD understand and cope with social environments and situations in everyday life (Weiss, LaRue & Newcomer, 2009). Furthermore, these narratives are

frequently supplemented with visual aids, including pictures and photographs, alongside written content, to elucidate social norms and expectations for individuals with ASD. Also, these stories assist learners to predict and anticipate problems, aid in new and complicated social settings, and improve their behaviour (Ameen, 2020). Thus, each social story needs to be unique and tailored according to the specific learner with ASD.

2.5.1.4 Makaton

Makaton, a teaching approach defined as a simplified form of British sign language, is employed to aid language and communication growth (Erasmus et al., 2019). This strategy has demonstrated remarkable efficacy in mitigating social and communication challenges in individuals diagnosed with ASD. Additionally, as noted by Kontra, Goldin-Meadow, and Beilock (2012), observing hand movements during the formation of particular signs enhances the learner's understanding.

2.5.1.5 DIR/floortime

The Developmental Individual Relationship-Based Model (DIR) presents an integrative framework facilitating a comprehensive assessment and teaching approach involving parents, specialists, and teachers. This approach encompasses learners and families, addressing core challenges such as social and emotional skills, language, and cognition through interactive methods (Greenspan, 2012). Moreover, according to Ameen (2020), employing the DIR teaching strategy fosters successful relationships among learners, enhancing their emotional development and enabling them to reach their full emotional potential. Furthermore, the DIR/floortime teaching approach enables learners to establish a strong foundation for social, emotional, and intellectual growth, promoting interaction with others and decision-making skills. Consequently, this teaching method proves effective in stimulating cognitive development and setting developmental play objectives for those with ASD (Liao et al., 2014). In practice, DIR/Floortime involves therapists or caregivers engaging with learners in playful, child-led interactions, focusing on promoting emotional connections, social engagement, and developmental progress through meaningful and interactive experiences on the floor.

2.5.1.6 Lego therapy

Lego therapy can be identified as a social skills intervention strategy focussing on developing learners' strengths and interests while also addressing some of the shortcomings observed in alternative social skills programmes by adopting a more naturalistic approach and being adaptable to school environments (Boyne, 2014). Furthermore, Lego therapy can be used to help motivate behavioural change and can be used as an efficient teaching strategy to increase social competence and communication skills. The focal skills include both verbal and non-verbal communication, taking turns, sharing, and fostering collaboration (Lindsay et al., 2017).

Lego therapy, or 'Lego club', includes a minimum of three participants who rotate between roles: 'supplier', 'builder', and 'engineer'. Each adheres to defined design rules. The supplier finds blocks guided by the engineer, who interprets instructions and selects the necessary pieces for assembly. The builder then assembles blocks according to the engineer's directions (Baron-Cohen et al., 2014). Thus, this process includes verbal and non-verbal communication skills, turn-taking, sharing, and problem-solving skills.

2.5.1.7 Virtual Reality (VR) technology

A new trend is emerging where technology is incorporated into interventions focussed on enhancing social skills. This includes the utilisation of computer-assisted intervention tools such as videos, interactive multimedia, and most recently, virtual learning platforms like Virtual Reality (VR) (Pandey, 2020). According to Pandey (2020), VR is a digitally created three-dimensional environment utilized for therapeutic aims. This method is based on the concept that the brain better processes information when it's presented through a blend of visual, auditory, and tactile stimuli. The VR system comprises external tools (visual, auditory, haptic), internal tools (trackers, gloves, joysticks, etc. for position and motion), graphic image rendering, and software/database components. This setup creates a sense of presence within the 3D virtual environment for the user.

For a completely immersive experience in VR, Head-Mounted Devices (HMDs) are necessary. These devices are worn by individuals, fully immersing them in the virtual environment (VE) and providing 3D views (Pandey, 2020). The use of technology as a therapeutic tool could empower teachers to customise the learning journey and adapt

treatments based on learner preferences, personal requirements, and advancements. Information technologies provide a productive, user-friendly, supportive and emotionally immersive environment for learning among learners with ASD. Given that individuals diagnosed with ASD struggle to maintain eye contact, VR systems have the ability to replicate faces and adjust their realism. This adaptation aims to align with the visual preferences of these learners and elicit a more favourable response, enabling better learning in VR settings (Thai & Nathan-Roberts, 2018).

By recreating social situations within a virtual environment, the constrained interaction offered by the computer interface becomes more manageable and appealing to these learners. Consequently, this approach creates a secure and encouraging environment conducive to learning. Therefore, teachers need the ability to effectively apply VR environments to the intended learner, enabling the provision of Social Skills Training (SST) that can be transferred to real-world situations while still being tailored to the needs of the learner (Pandey, 2020). Teachers should have a strong sense of confidence in using VR technology to create interventions that engage and bring joy to those with ASD.

2.5.2 Repetitive/stereotyped behaviour

When teaching learners with ASD, the teaching strategies encompass a diverse array of specialised approaches addressing various behaviours and symptoms. (Pouretemad et al., 2017). One of these specialised approaches is applied behaviour analysis (ABA) (Ameen, 2020). Matson and Konst (2014) state that ABA has proven to be a more comprehensive and effective approach than speech and language therapy, occupational therapy, sensory and visual integration, medical interventions, and special diet methods for those with ASD. ABA is a division of a broader field of behaviour analysis, which is conducted in settings such as schools and homes. Furthermore, the fundamental purpose of ABA is to overcome symptoms of ASD such as communicative, social, and repetitive behaviours. In addition, ABA focusses on increasing language and communication skills, social skills, self-help skills, and self-management skills. This teaching strategy decreases inappropriate and unnecessary behaviour (Ivy & Schreck, 2016). Although the ABA approach is accepted as an effective teaching strategy, it is recommended that it be used alongside other teaching strategies such as the TEACCH programme and PECS (Ameen,

2020). Thus, to ensure the successful implementation of the ABA teaching strategy, it must be consistent and intense, in addition to requiring constant feedback and adjusting of the learner's behaviour.

2.5.3 Classroom structure: The TEACCH program

Studies have shown that individuals diagnosed with ASD positively respond to systematic educational programs tailored to their individual requirements (Lal, 2005). Systematic instructional techniques can establish environments that are familiar, predictable, and well-organized, thereby reducing anxiety, fostering independence, enhancing adaptability, and fostering tolerance for change (Ameen, 2020). The Treatment and Education of Autistic and related Communications Handicapped Children (TEACCH) program is highly recommended in the selection of instructional methods, prioritizing the identification and enhancement of the strengths and abilities of those with ASD (TEACCH, 2022; Virues-Ortega, Julio & Pastor-Barriuso, 2013). Central to the TEACCH program is structured instruction, which aims to help learners with ASD comprehend their surroundings thoroughly and function autonomously through a structured and foreseeable framework. Additionally, it bolsters communication, cognition, perception, imitation, and motor skills in learners with ASD (Benton & Johnson, 2014; Howley, 2015).

Moreover, structured instruction encompasses various fundamental components, including orderly settings, visual schedules, and organised tasks. Hence, structured teaching proves highly beneficial, as it delineates activity sequences while elucidating the instructional setting (Ameen, 2020). Classroom organisation is another crucial strategy to consider when teaching individuals diagnosed with ASD. Lindsay et al. (2014) further indicates that creating a fully inclusive classroom will improve the academic, social, and emotional growth of these learners, as well as create a feeling of acceptance of the learner with ASD. Landor and Perepa (2017) acknowledge that modifying the classroom environment can have positive effects in fostering the social incorporation of those with ASD. Given that these individuals thrive in environments characterised by consistency and structure, creating autism-friendly environments aims to alleviate stress and facilitate learners with ASD' social adaptation.

Locke et al. (2019) identify a further two teaching strategies that have proven their effectiveness in improving the social skills of learners with ASD. These strategies include adult-facilitated and peer-mediated models. These authors explain that adult-facilitated interventions include designing opportunities for learners to participate in organised interactions with peers during playground time, along with offering real-time guidance on developing social skills. In contrast, peer-mediated interventions involve instructing typically developing peers to engage with those with ASD. Furthermore, Locke et al. (2010) indicate that raising awareness of the conditions of individuals diagnosed with ASD, implementing social skills training and making use of learner support assistants (LSAs) can improve and promote the social incorporation of individuals diagnosed with ASD in mainstream classrooms. In addition, Salceanu (2020) states that the Milieu technique is another effective naturalistic teaching strategy of interaction, which involves using games, reinforcing communication efforts, utilising inherent rewards, and integrating the natural environment. Thus, strategies such as adapting resources, implementing a buddy system, teamwork, raising awareness, and adaptive teaching methods can all be used to support the social incorporation of those with ASD in mainstream primary schools.

Healthy student-teacher relationships (STRs) are a crucial element in creating a positive classroom environment. STRs of learners with ASD in regular mainstream schools can significantly impact their social inclusion in the classroom. High levels of conflict and dependency in STRs are associated with lower levels of social inclusion for those with ASD (Fujii, 2014). Therefore, it is important to understand the relationship between STRs and social functioning in individuals diagnosed with ASD when creating a supportive and inclusive classroom environment. Furthermore, teacher behaviours play a crucial role in creating a healthy classroom climate which directly impacts learners' social, emotional, and academic outcomes. A positive classroom environment with emotional and instructional support leads to greater social competence and greater self-control among learners (Fujii, 2014). Thus, emotional support, low levels of anger, high responsiveness to learner needs, and positive regard for different perspectives create a warm and supportive environment that fosters positive peer relationships.

According to Bennett et al. (2018), creating inclusive environments that accommodate diverse communication styles and interests can foster positive social interactions and friendships for those with ASD. These authors indicate that friendships have significant positive outcomes, providing affection, trust, companionship, and emotional stability. Therefore, it is clear that the development of social relationships helps individuals feel a sense of belonging and affiliation with their community, which is crucial for overall well-being and happiness.

2.6 Theoretical framework

The theoretical framework in this study will act as the foundation from which all knowledge and understanding will be constructed (Grant & Osanloo, 2014). It will serve as the structure and support for the study being discussed. This section will discuss and use two theoretical perspectives as a framework for the current research study: social constructivist theory and inclusive education.

2.6.1 Social constructivist theory

Social constructivist theory is a widely used social learning theory developed by the renowned educational psychologist Lev Vygotsky. Social constructivism places an emphasis on the role of social interactions in the development of knowledge and understanding (Vygotsky, 1962). Vygotsky theorised that knowledge is actively constructed and that a learner's cognitive development depends on social interactions (Akpan & Kennedy, 2020; Topçiu & Myftiu, 2015). One of the key components of Vygotsky's work is the Zone of Proximal Development (ZPD), which focusses on the cognitive development of learners with the necessary support and guidance of a more knowledgeable other and/or a peer (Topçiu & Myftiu, 2015). McLeod (2007) posits that the ZPD also encourages socialisation among peers and teachers, which in turn increases the cognitive development of learners in the classroom. Similarly, Topçiu and Myftiu (2015) argue that Vygotsky's work focussed on the learner's interaction with society and the impact of social interactions, language, and learning culture. Therefore, it can be assumed that ZPD emphasises social inclusion and variance in the ability to promote cognitive development in all learners.

Social constructivism requires the learner to understand the importance of social aspects during the learning process by observing, interpreting, and adapting information to ensure cognitive development (Al-Shammari et al., 2019). The social role of learning is emphasised by Vygotsky (1962) due to its impact on cognitive development through learning and interaction between learners and their peers, caregivers and teachers. Therefore, constructivism encourages learners to develop their own knowledge and meaning through constructing, creating, and inventing. According to Akpan and Beard (2016), constructivism is the best suitable approach for teaching all learners, especially those learners with special educational needs. The key to constructivism is ensuring that learning is learner-centred and includes practical and real-life experiences (Al-Shammari et al., 2019). In addition, these authors state that learning-centred activities should provide internal and external scaffolding strategies, as they are essential for individuals diagnosed with ASD.

Conceptualisations of the incorporation of learners with ASD focus predominantly on classroom instruction and the role of the teacher. However, alternative theoretical perspectives are necessary to address the inclusion of learners with neurodiversity (Den Houting, 2019). Therefore, the use of social constructivist theory as a framework for inclusive practises through an emphasis on the sociocultural context is well-suited to the South African context with respect to those with ASD.

Social constructivist theory was chosen for this study as a framework to explore the enablers and constraints to social incorporation of individuals diagnosed with ASD in mainstream classrooms. Specifically, this theoretical framework will be used as it places emphasis on the importance of the social interactions of learners as well as the social impact these interactions have on cognitive development and emotional well-being. This allows the study to explore various issues surrounding diversity, inclusion and the role of social activity, including classroom instruction, as it pertains to facilitators and barriers to social incorporation of learners with ASD in mainstream classrooms.

Social constructivists propose a trio of effective strategies to enhance social interaction and facilitate meaningful learning experiences. Scaffolding is a fundamental concept where teachers provide structured support to learners, tailoring their assistance

to the individual's current level of understanding (Amineh & Asl, 2015). By gradually withdrawing this support as the learner gains proficiency, learners are encouraged to take more responsibility for their own learning, fostering independent problem-solving and collaboration. Cultural and linguistic considerations acknowledge the diversity within classrooms. Recognising and valuing different cultural backgrounds and languages promotes inclusivity and helps learners appreciate varied perspectives (Amineh & Asl, 2015). Finally, gradual progression is vital, as it ensures that learning experiences build upon prior knowledge and gradually increase in complexity. This method allows learners to grasp and internalise concepts at their own pace, thus creating a solid foundation for continued social interaction and knowledge construction (Amineh & Asl, 2015). Together, these strategies not only promote effective social interaction but also foster a rich, inclusive, and supportive learning environment.

2.6.2 Inclusive education

Inclusive education is a complex process as different researchers and communities form their own opinions and definitions for it. Inclusive education may be a global approach, but it is still a contextual issue, as each country has its own sociocultural, historical, political, and economic contexts and challenges (Eloff & Swart, 2017). According to Donohue and Bornman (2015), a worldwide trend is emerging towards inclusive education, which involves offering a single schooling system to all children within a country, irrespective of whether they have disabilities or barriers to learning. Inclusive strategies are believed to play a role in fostering a fair and equitable society (South African Department of Education, 2001). This is due in part to the fact that such strategies introduce children to diversity at a young age, thus establishing diversity as a commonplace experience rather than an exceptional one.

Inclusive education in South Africa was originally driven by South Africa's poor human rights history, which used to exclude certain race groups and disabilities from the education system. Engelbrecht (2006) states that in South Africa, inclusion is perceived through the lens of human rights, guaranteeing that every learner is granted equal opportunities to receive a quality education that empowers them to develop into

productive members of society. Therefore, the education community views inclusion and the recognition of human rights as the same (Nel, Nel, & Hugo, 2016).

The aim of inclusive education is to recognise that all learners can learn and that all learners will need some support. Inclusive education has been implemented to ensure the quality and right to education for all learners and can be seen as a modern educational approach recognised worldwide (Al-Shammari et al., 2019). According to the Education White Paper 6 (EWP6) (Department of Education, 2001:6), inclusive education can be defined as follows:

- Acknowledging and honouring the diversity of learners, recognising their unique learning requirements, all of which are equally important.
- Enabling education structures, systems, and learning methods to accommodate all the different learning needs of learners.
- The change in attitudes, behaviour, methods, and curriculum to accommodate all learners' needs.
- Maximising participation of all learners in the education system and minimising barriers to learning.

As per the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (1994), inclusion entails continuously addressing and accommodating the varied needs of all learners, promoting their engagement in learning, cultures, and communities, while concurrently minimizing exclusion within the educational framework. This encompasses adjustments and modifications to learning materials, methodologies, structures, and instructional approaches to embrace and educate every learner. Stubbs (2008) aligns with the aforementioned definition, defining inclusive education as a broad array of tactics, initiatives, and procedures aimed at upholding the universal entitlement to quality, pertinent, and suitable education. Furthermore, it endeavors to empower communities, systems, and establishments across all cultures and contexts to combat prejudice, celebrate diversity, foster participation, and surmount obstacles to learning and engagement for all learners. The objective is to foster a world characterized by peace, tolerance, sustainable resources, social equity, and where the needs and entitlements of all learners are fulfilled. Therefore, inclusive education can be perceived as the practice

of integrating learners with disabilities into the same classroom as their typically developing peers of corresponding age. This can be achieved by providing appropriate assistance to enhance both their social and cognitive learning experiences (Donohue & Bornman, 2015).

To ensure an inclusive education system, one must establish the necessary principles and values needed to avoid any marginalisation. Therefore, inclusion starts by recognising the right of every child to be in a mainstream education system and increasing the participation of learners in the curricula, cultures, and communities (Nel, Nel & Hugo, 2016). In addition, it is the responsibility of all schools to ensure that the diverse learning needs of all learners are met. Therefore, all learners are equally valued despite their background and different learning needs. Moreover, there are several important values to consider when implementing an inclusive education system. These values include equality rights, respect for diversity, acceptance, tolerance, honesty, trust, compassion, and hope (Nel, Nel & Hugo, 2016). In addition, various principles of inclusive education should also be considered. These principles encompass the human rights and social justice for all learners, their participation and integration into society, equal access to a unified inclusive education system, access to a standardized curriculum, fairness, and responsiveness to community needs (Eloff & Swart, 2017).

Nel, Nel and Hugo (2016) state that to ensure an inclusive environment, a few practises should be implemented. These practises include:

- Use of various learning and teaching methods as learners have different learning needs and styles.
- Adapting the curriculum, learning tasks, subject matter, assessment methods, and classroom setting to cater to and accommodate the diverse needs of every learner.
- Ensuring that accommodations and adaptations are made to the curriculum when needed. Accommodations are different approaches to teaching, assessments, and testing, whereas adaptations are changes made to the requirements of a task. Teachers must always consider the specific learning need before applying accommodations and adaptations, as each learning need is different and unique.

- Implementation of scaffolding techniques. Scaffolding techniques provide the learners with a certain amount of support during the beginning stages of teaching a new concept, then slowly reduce the support as a learner gains skills and experience through a lot of practise.

As indicated by Hulgin and Drake (2011), inclusive education embraces a constructivist teaching and learning methodology. Thus, employing constructivism-based practices within inclusive education emerges as the optimal method for fostering the social integration of individuals diagnosed with ASD in mainstream schools. These practices involve applying constructivism within an inclusive educational context, necessitating instructional techniques and approaches that facilitate learners in actively exploring intricate subjects (Al-Shammari et al., 2019). Numerous methods exist to explore these subjects, including integrating real-life examples, employing cognitive apprenticeships, presenting diverse viewpoints, facilitating social discussions, fostering reflective awareness, and offering ample guidance on constructive processes (Ertmer & Newby, 2013). Furthermore, ineffective inclusive education results from teachers' limited grasp of diverse inclusive approaches and the necessity for effective collaboration with professionals like psychologists and counsellors. Such partnerships are vital for inclusive educational practices, highlighting the significance of adopting a constructivist approach to encourage social engagement within educational endeavours directly involving schools, families, and communities. Moreover, this approach provides avenues for enhancing the social integration of learners, particularly those experiencing behavioural challenges. It has been stated that learners within a constructivism-based inclusive education setting would benefit the most from peer tutoring and cooperative learning (Al-Shammari et al., 2019). Through these practises, learners will be able to interact with each other and learn in a real-world setting. Thus, the belief in a constructivism-based inclusive classroom is that learners learn through experiences and real-life application.

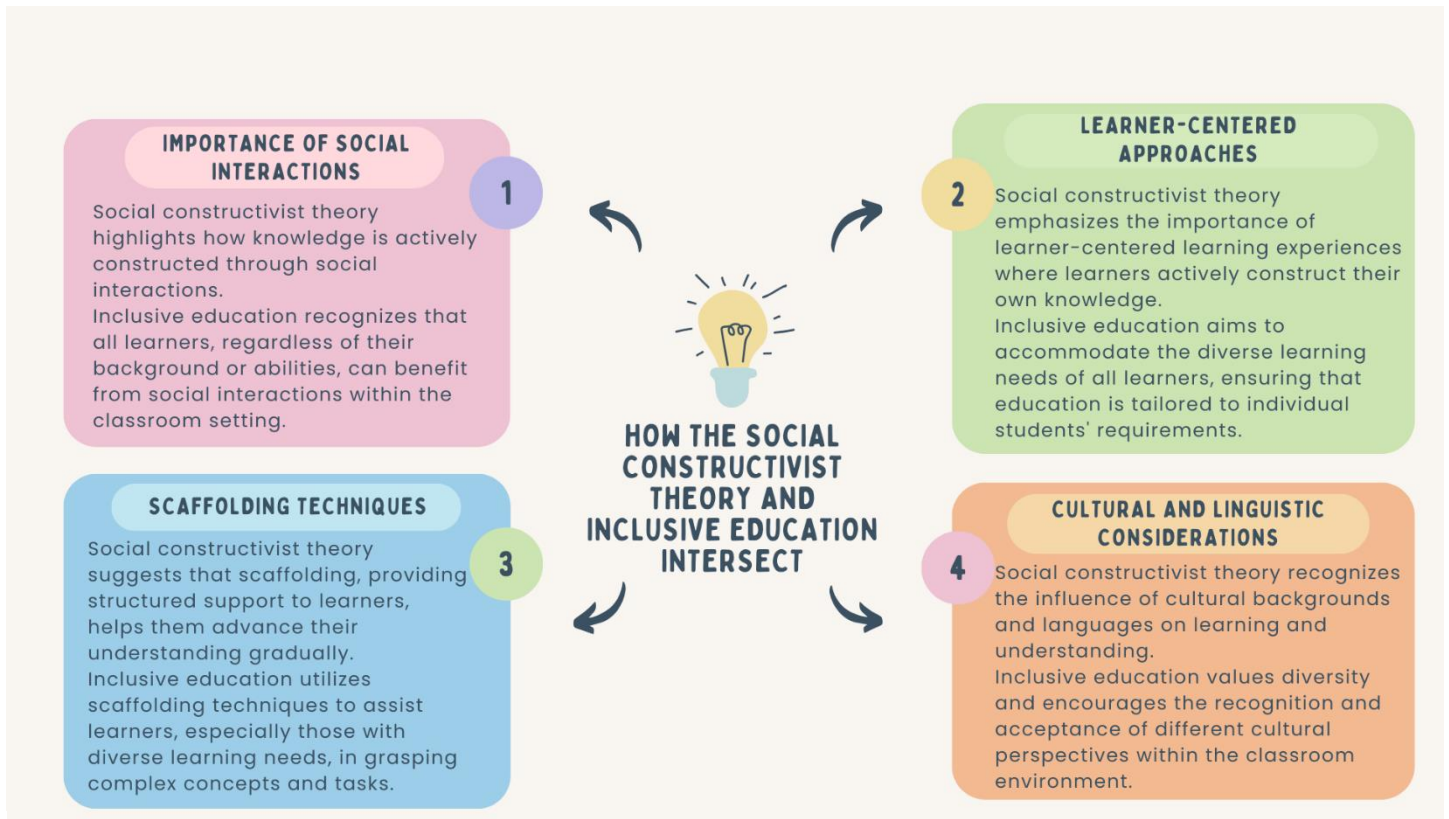


Figure 1: How the Social Constructivist Theory and Inclusive Education intersect. (Source: Author's own creation)

2.7 Conclusion

In conclusion, this chapter has provided an in-depth exploration of the prevalence rates of ASD globally and within South Africa, as well as the social challenges and characteristics of those with ASD. It has also examined the challenges faced by teachers in the social incorporation of individuals diagnosed with ASD and the current teaching strategies used in mainstream schools. Thus, addressing the social incorporation of learners with ASD requires a comprehensive understanding of their challenges, the provision of appropriate support and training to teachers, and the implementation of effective teaching strategies. By employing these strategies, mainstream schools can create inclusive environments that facilitate social participation and overall development of those with ASD.

Chapter 3: Research design and methodology

3.1 Introduction

During this chapter, the research design and methodology will be discussed and explained in-depth. This chapter will introduce the research paradigm and approach used to obtain and gather data for this study. Furthermore, the research design, sampling and selection of participants, data collection techniques and data analysis strategies will be discussed thoroughly. This chapter will also include ethical considerations, which will be defined and explained in detail.

3.2 Paradigmatic perspectives

A research paradigm is the belief system, structure, values and guide that researchers will employ to understand the reality and the data collected (Kivunja & Kuyini, 2017). Rehman and Alharthi (2016) support this perspective, stating that a research paradigm can be defined as a fundamental belief system and framework comprising assumptions concerning ontology, epistemology, methodology, and approaches. Therefore, a research paradigm can be seen as a lens through which researchers understand reality. This section will discuss the epistemology and methodology utilised in the research for this study.

3.2.1 Epistemology

Epistemology can be seen as the part of philosophy which studies the nature of knowledge as well as the process by which knowledge is obtained and validated (Gall, Gall & Borg, 2003). Epistemology within a research paradigm refers to the knowledge obtained by the researcher as well as the comparison between what is the truth and what is the reality (Kivunja & Kuyini, 2017). Maree (2020) mentions that epistemology is the relationship between the “knower and known”. Research epistemology also encompasses the examination of different research paradigms, which can be viewed as three approaches to educational research: positivism, interpretivism and critical theory (Rehman & Alharthi, 2016). During this research study an interpretivist paradigm was used to gather and obtain data. This paradigm was used as it allows for an interpretation of the world through multiple perceptions and experiences of various participants (Thanh

& Thanh, 2015). This paradigm also allows for the researcher to promote participation and comprehensive research, as interpretivism is rooted in the belief that reality is socially constructed and that the participants actively participate in shaping realities through their subjective experiences (Creswell, 2014). Therefore, in the context of this study, the application of this research paradigm recognises that participants (the teachers and learners with ASD) have unique perspectives, values, and interpretations of the social incorporation of those with ASD in mainstream schools, and this phenomenon must be understood within the contexts of both the teachers and learners.

According to Grix (2018), interpretivism can be considered as a response to the over-dominance of positivism. Interpretivism disagrees with the concept that there is only a single provable reality which is independent of our senses. Rehman and Alharthi (2016) state that outer reality cannot be understood by spectators as their realities are polluted with their own views and personal experiences. Grix (2018) indicates that perception can be seen as an active process of creation rather than a passive process of perceived representation. It is therefore evident that the goal of interpretive research is not to discover global unbiased knowledge and truth but to try to understand individuals' interpretations of their social interactions.

According to Mills, Durepos and Wiebe (2010), an interpretive paradigm refers to the importance that the observations of individuals can create a better understanding of social science. Interpretivism seeks to understand a certain context and generally believes that reality is socially constructed (Thanh & Thanh, 2015). Therefore, these researchers do not aim to obtain answers from participants in a rigid manner but rather to obtain lived experiences from participants as this is seen to be a more accurate and comprehensive reflection of their experience. Morehouse (2011) indicates that interpretivism can be seen as an inclusive research epistemology as it foregrounds the importance of gathering multiple viewpoints from different participants within various groups and cultures to allow for a more comprehensive understanding of the data collected. Therefore, it can be said that if one believes in several social realities, it implies that these realities are perceived from different viewpoints by different individuals.

In this study, an interpretivist paradigm guided the research. Utilizing semi-structured interviews and self-developed open-ended questionnaires, the aim was to gain insight into participants' experiences and perceptions regarding the barriers and facilitators to the social incorporation of individuals diagnosed with ASD in mainstream schools. The study sought to explore both factors that enable and hinder social inclusion in this context within Tshwane. Therefore, the interpretivist paradigm was chosen to capture the perspectives of various stakeholders in mainstream educational settings. This included gathering teachers' experiences regarding the social integration of learners with ASD, along with valuable input and suggestions from the learners themselves on how best to include them in social activities within these schools.

3.2.2 Methodology

Methodology, according to Rehman and Alharthi (2016), guides researchers in deciding what type of data is necessary for the specific study as well as which data collection tools will be best suited for the purpose of their study. Creswell (2014) agrees with these authors as he indicates that methodology encompasses the specific procedures, tools, and techniques utilised to collect, analyse, and interpret data in a research study. Furthermore, he emphasises the three different research approaches that can be used depending on the research objectives and the nature of the phenomenon being studied. These research approaches include qualitative, quantitative, or a combination of both (mixed methods). During this research study a qualitative research approach was used to gather data from various participants. A qualitative research approach aligns seamlessly with an interpretivist paradigm as it prioritises the exploration of individuals' subjective experiences and meanings, emphasising the need to understand the context and multiple perspectives within a given phenomenon.

A research approach can be defined as the practical plans and procedures of how researchers will collect, analyse and interpret data to present valid and reliable results which in turn will address the research problem (Kivunja & Kuyini, 2017). According to Alase (2017), a qualitative research approach allows the researchers to engage with participants to explore, investigate and understand individual experiences. Jansen and Warren (2020) agree with this statement as they indicate that a qualitative approach aims

to understand and explore multiple views derived from real-life experiences of individuals or small groups by showing respect and sensitivity to the data collected as well as to the participants. They further argue that a qualitative approach is participant-orientated, and that data are obtained by the researcher through interviews, case studies, and many other research methods. Moreover, Fossey et al. (2002) and Crowe et al. (2015) state that qualitative research aims to address questions to develop a comprehensive understanding of the meaning and experiences of people's daily lives and social worlds.

Hence, this study adopted a qualitative research methodology to collect data from diverse participants, aiming to investigate both facilitators and obstacles to the social integration of individuals diagnosed with ASD in mainstream schools in Tshwane. The qualitative approach facilitated engagement with teachers in mainstream schools, allowing exploration and comprehension of their unique experiences regarding the factors that aid or hinder the social incorporation of learners with ASD in their classrooms. Additionally, it enabled interaction with those with ASD to understand their perspectives and recommendations for achieving social inclusion in the classroom environment. Consequently, individual semi-structured interviews were conducted with teachers, and self-developed open-ended questionnaires were administered to learners, ensuring data collection with due respect and sensitivity towards both groups.

3.3 Research design

3.3.1 Research design

A research design can be defined as the overall planning for the current study being investigated. According to DeForge (2012), a research design is a logical structure that guides the researcher to address research problems as well as to answer research questions. Miller and Salkind (2011) agree with this statement as they define a research design as the plan of the research study, which can be subjective or objective. Cohen, Manion and Morrison (2017) further elaborate that a research design refers to the overall structure and plan that guides a research study. It involves making decisions about various aspects of the research, such as the research questions or hypotheses, the selection of participants or data sources, the data collection methods, the data analysis techniques, and the overall organisation of the study. Therefore, a research design can

be used as a guideline to support the researcher with their research study. Moreover, researchers have several different research designs depending on the nature of their research questions, the available resources, and the desired level of control and generalisability. These designs include experimental design, quasi-experimental design, survey design, case study design, correlational design, longitudinal design, cross-sectional design, phenomenological design, and mixed methods (Creswell et al., 2007; 2014).

During this research study, a phenomenological research design was used to collect data. According to Wilson (2015), phenomenological research delves into the exploration of how individuals perceive and comprehend their world as genuinely significant or meaningful. The aim of phenomenology is, therefore, to gain insights into the human experience (Wilson, 2015). Worthington (2013) agrees as he indicates that phenomenology focuses on the essential aspect of an individual's meaning as the core element of the human experience. Thus, phenomenology focuses on a specific experience or what a person perceives, rather than delving into individual life histories, societal conventions, or attitudes, although these factors may naturally come into play (Wilson, 2015).

Phenomenological research can be confusing as it is rooted in a philosophical framework that forms the foundation of qualitative research. It also serves as a specific qualitative methodology for uncovering the fundamental structure of shared essences within a social phenomenon. The most important finding obtained by phenomenology is an understanding of the experiences lived by the individuals (Worthington, 2013). Therefore, a phenomenological research design is highly suitable for examining emotional, affective, and frequently intense human experiences (Merriam & Tisdell, 2015). These authors characterise a fundamental qualitative research study as being grounded in the philosophical foundations of constructivism, phenomenology, and symbolic interactionism. Such research is employed by researchers who aim to investigate three key aspects: how individuals interpret their experiences, construct their perceptions of reality, and assign significance to their experiences. The overarching

objective is, therefore, to gain insight into how people derive meaning from their lives and the experiences they encounter.

The benefits of using a phenomenological research design are that it delves into the profound human elements of a situation, focussing on emotions, sensations, and mood. This deeper understanding has the potential to empower both the researcher and the participants (Wilson, 2015). Wilson (2015) further indicates that it is important to understand that phenomenological research is not designed to generate theoretical frameworks. It requires a significant level of personal involvement from all participants, and trust can sometimes be a constraining factor in this process.

3.3.2 Sampling/selection of participants

Sampling in terms of research refers to the sample size that will be used in the study (Nieuwenhuis, 2019). It occurs when a researcher looks at a portion of a larger group of participants to use the data collected to make statements about the broader population (Salkind, 2010). A sound sampling method will allow for the validity of the data that is free of bias (Salkind, 2010). Furthermore, Cohen, Manion, and Morrison (2007) contend that there are two main sampling approaches: probability sampling and non-probability sampling. The difference lies in that with probability sampling, the likelihood of selecting individuals from the larger population is determined, whereas with non-probability sampling, the likelihood of selecting individuals from the broader population for the sample remains unknown. Probability sampling techniques include simple random sampling, systematic sampling, stratified sampling, cluster sampling, stage sampling, and multi-phase sampling. Conversely, non-probability sampling methods comprise quota sampling, dimensional sampling, purposive sampling, and snowball sampling (Cohen, Manion, & Morrison, 2007). For this study, a purposive sampling approach was employed.

During purposive sampling, researchers selectively choose specific cases to be part of the sample based on their assessment of their representativeness or possession of the specific characteristics being sought (Cohen, Manion & Morrison, 2007). A purposive sampling technique, therefore, refers to a sample that has been chosen for a reason or a 'purpose'. Thus, the sample will be representative of the given criteria within the population (Suen, Huang & Lee, 2014). Purposive sampling also allows the researcher to

apply their expertise and knowledge to judge the collected data (Lavrakas, 2008; Rossi et al., 2013). In addition, purposive sampling is a type of non-probability sampling, and its main objective is to use the data collected to produce a sample that logically represents the population within the study. Moreover, purposive sampling is often used to engage with individuals who possess extensive knowledge of specific issues, often due to their professional roles, authority, network connections, expertise, or experience (Ball, 2012). For this study, participants had to meet specific inclusion criteria. Selection was contingent upon both teachers and those with ASD being affiliated with a mainstream primary school in the Tshwane area. Given that the research approach entailed semi-structured interviews and self-designed open-ended questionnaires, it was imperative that individuals diagnosed with ASD were sufficiently able and competent to respond to the inquiries. The teachers interviewed must have been the teachers teaching those learners with ASD.

Information was gathered from two mainstream primary schools within the Tshwane area. The sample comprised four teachers, two from each school, who underwent interviews, alongside two learners with ASD from one of the schools. The learners with ASD ranged in age from 10 to 13 years. Consequently, a purposive sampling approach was employed for the study, as data were collected with a specific objective: to delineate the factors aiding and impeding the social integration of learners with ASD in mainstream primary schools and to identify strategies for their successful inclusion in such settings.

As mentioned by Bakkalbasioglu (2020), purposive sampling has several advantages as well as disadvantages. Purposive sampling is cost effective and saves researchers time as they can obtain valuable data from a small population. Purposive sampling also allows researchers to obtain qualitative responses from the participants leading to more valuable insights and precise research outcomes. Purposive sampling has several disadvantages that may also create challenges for the researcher. Researchers may often exclude subgroups of participants, which can cause lopsided research outcomes. The participants can also manipulate some of the data provided, which may cause invalid research results. These challenges can be overcome by establishing great trust among

the researcher and the participants as well as including all relevant participants that may have valuable opinions and insights for the research study being conducted.

3.3.3 Data collection and documentation

The process of data collection involves a systematic gathering of information, facilitating researchers in addressing their research inquiries, examining their hypotheses, and assessing their intended results (Marks & Yardley, 2003; Rohleder & Lyons, 2017). Bhandari (2020) concurs with this assertion, defining data collection as a systematic gathering of observations enabling researchers to comprehend their research dilemma. Therefore, data collection encompasses the accumulation of information through specific data collection tools to address research queries and comprehend the research issue at hand. Guest, Namey and Mitchell (2013) mention three commonly used data collection methods when collecting data. These methods include participant observation, in-depth interviews, and focus groups. During this research study, data was collected using semi-structured interviews and self-constructed open-ended questionnaires.

These research instruments can be written or orally presented and usually follow an interview-style format (Marks & Yardley, 2003). Semi-structured interviews can be seen as conversations between two or more people to obtain valuable information for a specific purpose. These data collection instruments provided answers for the research study which aimed to establish strategies to socially include those with ASD within mainstream primary classrooms.

Individual interviews were conducted with mainstream primary school teachers in Tshwane based on their experiences concerning the barriers and facilitators to the social incorporation of individuals diagnosed with ASD in their classrooms. These interviews provided valuable information that was used to answer the research questions. Self-constructed open-ended questionnaires were provided to various learners with ASD to gain a better understanding of the social barriers and facilitators these learners faced daily in mainstream primary schools. To ensure that the data collection process was accessible, accommodations such as the use of scribes were made available to support these learners in completing the questionnaires. Additionally, the data collected through

these questionnaires provided valuable information and were used to answer the first and second research sub-questions.

There are various advantages to this data collection method such as exploring various perspectives within a community, gaining a better understanding and appreciation of different values, beliefs, and assumptions, and providing an open-ended platform for participants to raise various issues (Choy, 2014). However, the disadvantages of this method include the fact that it can be time-consuming and, therefore, essential issues or themes can be overlooked, in addition to data results not being objectively verifiable and requiring a labour-intensive analysis process such as categorising and recording data (Choy, 2014). To overcome these disadvantages, I utilised member checking to validate the data and ensure the credibility of the findings.

In crafting the self-constructed open-ended questionnaire, I approached the design process with careful consideration of the research objectives and the unique perspectives of individuals diagnosed with ASD in mainstream primary schools. Drawing from established principles of data collection outlined in scholarly literature, I formulated questions aimed at eliciting rich, detailed responses that would provide valuable insights into the social barriers and facilitators experienced by these learners daily. I ensured that the questions were open-ended, allowing participants the freedom to express their thoughts, experiences, and suggestions in their own words. Additionally, I paid close attention to language and formatting to ensure clarity and accessibility for participants, including those who might require additional support. Throughout the design process, I remained mindful of the ethical considerations surrounding research involving vulnerable populations, taking steps to ensure the questionnaire was respectful, non-intrusive, and conducive to meaningful participation. By incorporating these considerations into the design of the questionnaire, I aimed to create a research instrument that would yield comprehensive and insightful data to address the research objectives effectively.

3.3.4 Data analysis and interpretation

As stated by Flick (2014), data analysis holds significant importance as the pivotal stage in a qualitative research study. Whenever data is collected, it needs to be studied to form outcomes and patterns in the research. These outcomes and patterns will be

classified or interpreted to make statements about the different dimensions of what is being represented within the data (Flick, 2014). Furthermore, Flick mentions three general aims when analysing data from a qualitative research study. The first aim looks at describing the content within the study. This is done by comparing the individual's point of view. The second aim is the identification of the differences and similarities within the data collected, and the third aim is the development of the theory. According to Gibbs (2018), techniques like content analysis, thematic analysis, and grounded theory are used to extract meaning and patterns from qualitative data. During this study, a thematic approach was used to analyse and organise the data collected. A thematic approach refers to the organisation of the differences and similarities within the data (Fugard & Potts, 2019). These differences and similarities are categorised into different themes or ideas. Organising the observations of the data that were collected in this study helped me to identify patterns within the data, and thus, I was able to make inferences about the data provided by the participants in the study. The inferences that were made used an inductive reasoning approach as the reasoning was based on a group of traits (Salkind, 2010). As per Braun and Clarke (2012), the thematic analysis methodology encompasses six stages, comprising becoming acquainted with the data, creating initial codes, seeking themes, examining prospective themes, defining and labelling the themes, and finally, generating the report.

It is therefore evident that a thematic approach was best suited for this study as the data from the questionnaires and interviews were looked at and categorised into their different questions. In deductive data analysis, themes are formed aligning with the research question, as researchers systematically apply pre-established theoretical frameworks or hypotheses to categorise and interpret collected data, ensuring that the identified themes directly correspond to the study's overarching research objectives. Thereafter, the answers provided were investigated to generate a consensus for each question. After a consensus was made, the general conclusions were observed to check if any potential links or themes could be identified in the data collected. Furthermore, the potential themes were then reviewed to see whether they were relevant to the study. Confirmations were made to ensure that these themes answered the research questions being asked and whether they added value to the social incorporation of those with ASD

in mainstream primary schools. Each theme was then defined and indicated the relevance of the theme to the main research topic, which was 'The social incorporation of learners with ASD in mainstream primary schools in a South African context'. Lastly, a report was created that indicated which common links were found and how they were categorised into different themes.

A thematic approach is a very flexible approach that can be modified for various studies to provide rich and detailed data. This approach also offers a more accessible form of analysis, especially for new and young researchers (Nowell et al., 2017). Furthermore, this approach is easily understood and quick to learn as there are little to no procedures to be followed. A thematic approach is very useful when reviewing various participants' opinions and perspectives to determine similarities and differences and to generate valuable insights. Yet, the adaptability of thematic analysis may lead to discrepancies and a dearth of cohesion during the formulation of themes from the gathered data (Nowell et al., 2017). Thus, a thematic analysis approach has many advantages as well as some disadvantages which need to be considered when analysing the data collected. Doing so will ensure that themes are developed wisely and that any inconsistencies are identified early and eliminated to ensure consistency and coherence within the data and insights provided.

3.3.5 Ethical considerations

According to Singer (2021), ethics can be defined as a moral philosophy that deals with concepts of goodness and badness, as well as distinguishing between right and wrong. Ethics can therefore be defined as a set of principles that guides a person's overall behaviour and the choices they will make. It is thus of utmost importance that several ethical considerations should be considered to ensure that a research study is ethical. Vicars et al. (2015) indicate that throughout the research process, it is essential for the researcher to prioritise the safety and well-being of participants, ensuring they are shielded from harm and unnecessary stress. Ethical considerations such as informed consent, no harm, anonymity, confidentiality, and voluntary participation need to be considered when conducting research (Connelly, 2014). Institutional ethical clearance was granted for this study by the Ethics Committee.

3.3.5.1 Informed consent

Obtaining informed consent is an integral aspect of conducting ethical research and can be granted either verbally or by signing a consent form (Vicars et al., 2015). In addition, it is essential that individuals have a clear understanding of the research objectives, methodology, and potential risks associated with their participation in the research before granting consent. According to Connelly (2014), the main goal of informed consent is to guarantee that participants have the necessary information to make an informed decision regarding their willingness to take part in the conducted research study. Thus, assent from those with ASD (see Appendix D), informed consent from parents (see Appendix E), and informed consent from teachers (see Appendix F) were ensured when conducting research. All participants were thus well-informed, in a manner that was accessible, regarding the purpose of the study, what was required of them, and that all personal information, such as their identities, would be kept confidential, which allowed them to make an informed decision as to whether or not to participate in this study.

3.3.5.2 Privacy and confidentiality

Privacy and confidentiality are crucial aspects when conducting ethical research (Wiles et al., 2008). Privacy encompasses the ability to control the information revealed about an individual or a group of participants involved in a research endeavor. Thus, safeguarding a participant's privacy entails managing their public portrayal or representation (Fouka & Mantzorou, 2011). Conversely, confidentiality pertains to the handling and storage of data. Therefore, privacy focuses on shielding the individual, while confidentiality aims to disseminate data in a manner that minimizes participants' exposure to potential scrutiny or harm (Vicars et al., 2015). Hence, it is incumbent upon the researcher to refrain from openly discussing or disclosing observations or discussions involving participants in their research study. Throughout this study, all obtained information was kept strictly confidential and was solely accessible to my supervisors. No data was shared with any other parties. All information gathered from the study was securely stored in locked files in research offices at the University of Pretoria.

Engagement in this study was entirely optional, and both parents/guardians and learners had the autonomy to decline participation or withdraw at any point without needing to provide justification. Prospective participants were extended invitations to join the study and were explicitly informed about its voluntary nature. Upon consenting to partake, participants were assured of their right to withdraw from the study at any moment if they felt uneasy, with no adverse consequences.

In conclusion, ethical considerations play a crucial role in research, guiding researchers to prioritise participant well-being, informed consent, privacy protection, protection from harm, and responsible data handling to ensure the integrity and trustworthiness of the study. As individuals diagnosed with ASD are considered a vulnerable population group, ethical considerations such as assent from the learners, informed consent from the parents and teachers, voluntary participation of all participants, and protection of participants and confidentiality were ensured during the research. Furthermore, it was ensured that participants would not be harmed in any way during their participation. It was also ensured that participants were always made comfortable and not stressed. The topic of social inclusion might have caused distress to the learners. Therefore, a counsellor was made available to assist these learners, should there have been a need.

Chapter 4: Presentation and analysis of findings

4.1 Introduction

In this chapter, data derived from in-person semi-structured individual interviews involving teachers as participants and self-developed open-ended questionnaires completed by learners with ASD as participants are presented and scrutinized. The findings are then analysed thematically. The subsequent inquiry questions steered the data analysis.:

- a) What are the barriers to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane?
- b) What are the facilitators to social inclusion as experienced by learners with ASD in mainstream schools in Tshwane?
- c) What are teachers' experiences concerning the barriers to social incorporation of learners with ASD in mainstream schools in Tshwane?
- d) What are teachers' experiences concerning the facilitators to social incorporation of learners with ASD in mainstream schools in Tshwane?
- e) What are social inclusion teaching strategies used to include learners with ASD in social activities in mainstream schools in Tshwane?

The findings of the data collected from the participants will be divided into themes as well as sub-themes to discover similarities and differences between the participants of two mainstream primary schools in the Tshwane region. These themes will be presented along with the findings from the participants.

4.2 Description of participants

The table below provides demographic information about the participants.

Table 4.1 Demographic information of teachers interviewed.

Participant	School	Age	Grade	Gender
P1	A	60	5	F
P2	A	57	6	F

P3	B	31	6	F
P4	B	42	7	F

Table 4.2 Demographic information of learners with ASD who filled in the questionnaires.

Participant	School:	Age:	Grade:	Gender
P5	B	13	6	M
P6	B	14	7	F

4.3 Themes and sub-themes

Table 4.3 Themes and sub-themes

Themes:	Sub-themes
Barriers to social inclusion as experienced by participant learners with ASD in mainstream schools	<ol style="list-style-type: none"> 1. Struggling to form friendships. 2. Lack of participation in social activities.
Facilitators of social inclusion as experienced by learners with ASD in mainstream schools	<ol style="list-style-type: none"> 1. Supportive teachers. 2. Positive reinforcements.
Further recommendations for the social incorporation of learners with ASD from the learners themselves	<ol style="list-style-type: none"> 1. Create classrooms that are better suited for learners with autism. 2. Educate peers.
Challenges faced by teachers when teaching learners with ASD in mainstream schools	<ol style="list-style-type: none"> 1. Accommodating diverse learning needs. 2. Lack of support, training, and sufficient resources.

	<ol style="list-style-type: none"> 3. Dealing with fluctuating emotions. 4. Communicating. 5. Managing noise levels.
<p>Current teaching strategies used to socially include learners with ASD in mainstream schools</p>	<ol style="list-style-type: none"> 1. Incorporate interests in the learning content. 2. Provide individual time and attention. 3. Avoid too much sensory-stimulating activities.
<p>Further suggestions by teachers on how to socially include learners with ASD</p>	<ol style="list-style-type: none"> 1. Raise more awareness of ASD. 2. Incorporate small group activities. 3. Exhibit Patience and Compassion. 4. Awareness. 5. Encourage collaborative work in groups. 6. Provide sufficient individual attention. 7. Minimise sensory stimulation where possible. 8. Create an inclusive culture in the classroom. 9. Build relationships with learners and their parents.

4.4 Findings

Theme 1 and the five sub-themes answer the question: What are the barriers to social inclusion experienced by learners with ASD in mainstream schools in Tshwane? The discussion below indicates responses from both teachers and learners.

4.4.1 Theme 1: Barriers to social inclusion as experienced/faced by participant learners with ASD in mainstream schools

During the data collection process, participant learners were asked to identify the barriers that they face daily in their school. The common barriers among the participants included struggling to form friendships and a lack of participation in social activities. Therefore, these challenges will be thoroughly discussed in the following sub-themes.

4.4.1.1 Sub-theme 1: Struggling to form friendships

Struggling to form friendships is another concerning challenge faced by learners with ASD in mainstream schools. When participants were asked if it was easy for them to make friends, both participants indicated that they were struggling to form friendships with their peers. Thus, these learners usually have a lack of friendship.

P5 clearly stated, “I do not have a lot of friends”, further stating, “I have two friends”.

P5 also stated, “...I am not always sure what my classmates want or how they want to play. Many of the kids avoid talking to me”.

P6 stated, “I have one friend, she is Karli”. P6 also stated that, “...I am different than the other kids. I am built different”.

Learners with ASD in mainstream schools face significant challenges in forming friendships, as evidenced by participant feedback. Both participants indicated difficulty in making friends, often resulting in a lack of close social connections. One participant reported having only two friends and expressed confusion about peer interactions, feeling avoided by classmates. The other participant mentioned having just one friend and highlighted a sense of being different from other children, which further complicates their ability to form friendships.

4.4.1.2 Sub-theme 2: Lack of participation in social activities

When participants were asked whether they participate in any social activities at school, it was clear that social participation was lacking among these participants. Their participation in social activities did not appear to have been actively encouraged or motivated, potentially contributing to their perceived disinterest in such engagements.

P5 stated, “No, I do not really like playing sport”.

Similarly, P6 stated, “Exercises, but it interferes with creative arts”.

Participants with ASD in mainstream schools reported minimal participation in social activities, highlighting a lack of encouragement and motivation from their environment. This lack of active engagement may contribute to their perceived disinterest in such activities. For instance, one participant expressed a dislike for sports, while another mentioned that physical exercises interfered with their interest in creative arts.

4.4.2 Theme 2: Facilitators to social inclusion as experienced by participant learners with ASD in mainstream schools

When participant learners were asked about the facilitators of social inclusion they experience at school, they mentioned supportive teachers and positive reinforcement as examples. It was clear that all learners are well-supported by their teachers and that positive reinforcement can contribute to the improvement in the behaviour of learners with ASD.

4.4.2.1 Sub-theme 1: Supportive teachers

Supportive teachers are pivotal in nurturing learners' growth and fostering a positive learning environment. During the analysis process, it became clear that the participants admire and respect their teachers. Both participants voiced and indicated the supportiveness of their parents.

P5 stated, “She always helps me with my schoolwork and tell the other kids to be quiet when they are too loud. She always makes me feel better when the other kids are mean to me or avoid me”.

P6 stated that their teacher always helps them with their schoolwork. The participant stated, “Schoolwork, she tries to help get us the answers”.

Supportive teachers play a crucial role in nurturing learners' growth and creating a positive learning environment. Analysis revealed that participants admire and respect their teachers, appreciating their supportive nature. One participant noted that their teacher helps with schoolwork, ensures a quiet environment, and provides comfort when peers are unkind. Another participant similarly highlighted their teacher's assistance with schoolwork, indicating a strong sense of support and encouragement from their teacher.

4.4.2.2 Sub-theme 2: Positive reinforcements

Positive reinforcement is a fundamental tool for motivating learners and encouraging the acquisition of desired skills and behaviours. Positive reinforcement is particularly significant for learners with ASD, as it can provide essential support to shape and strengthen adaptive behaviours and skills within their unique individual learning characteristics.

When the participants were asked about what they like about the school, they stated the following:

P5 stated, “I like break times because I can play with my toys”.

P6 stated, “Well we get to do spelling words whereafter teacher gives us treats”.

Positive reinforcement is crucial for motivating learners and fostering the acquisition of desired skills and behaviours, especially for learners with ASD. It provides essential support to shape and strengthen adaptive behaviors within their unique learning characteristics. When asked what they liked about school, participants highlighted the aspects of positive reinforcement: one enjoyed break times for playing with toys, while the other appreciated receiving treats after spelling activities.

4.4.3 Theme 3: Further recommendations for the social inclusion of learners with ASD by participant learners

Participants were allowed to recommend to teachers how to better accommodate and socially include them in school activities. The recommendations that were provided

included creating classrooms that are better suited for learners with autism, and educating peers.

4.4.3.1 Sub-theme 1: Create classrooms that are better suited for learners with autism

According to Participant 5's response, classrooms that are better suited for learners with ASD will improve the social inclusion of these learners in mainstream primary schools.

P5 stated, "Not too bright lights and more comfortable chairs in the classroom".

P6 stated, "Clean and tidy classrooms"

According to the participants, classrooms better suited for learners with ASD can enhance their social inclusion in mainstream primary schools. Participant 5 suggested improvements such as dimmer lighting and more comfortable chairs, while Participant 6 emphasized the importance of clean and tidy classrooms. These adjustments could create a more conducive learning environment for learners with ASD, promoting better social integration..

4.4.3.2 Sub-theme 2: Educate peers

Educating typically developing peers about their peers with ASD in mainstream schools is important as it contributes to the social incorporation of learners with ASD in mainstream schools. According to the findings, the participants indicated that educating their peers would improve their social experience at school.

P5 stated, "My teacher can also talk to the other kids and explain to them why I am different".

P6 stated, "You know, just ask me some question and tell them about myself"

Educating typically developing peers about ASD in mainstream schools is crucial for enhancing the social inclusion of learners with ASD. The findings indicate that participants believe such education would improve their social experiences. Participant 5 suggested that teachers explain to other students why they are different, while Participant 6 expressed a desire for peers to ask questions and learn more about them. This approach

could foster understanding and acceptance, leading to a more inclusive school environment.

4.4.4 Theme 4: Barriers faced by participant teachers when teaching learners with ASD in mainstream schools

During the data collection process, the participants were asked to identify challenges they faced when trying to teach learners with ASD. The most common challenges which were mentioned included accommodating diverse learning needs, lack of support and resources, dealing with emotional behaviours, and challenges with communication. Therefore, these challenges will be thoroughly discussed in the following sub-themes.

4.4.4.1 Sub-theme 1: Accommodating diverse learning needs

When the participants were asked about the challenges they faced daily when teaching learners with ASD, it was clear that being able to accommodate the diverse needs of the learners was a big challenge.

P1 stated, “I think my biggest challenge is to accommodate all learners’ diverse needs in my classroom as some struggle to manage their emotions and others need more attention than others.”

P3 also stated, “I will say that there are issues when trying to communicate with them and to accommodate all the different diverse needs of the learners.”

Based on these responses from the participants, accommodating learners is important; however, it can be difficult when there are various needs that need to be considered. This is made even more difficult since learners with ASD fall on a spectrum with a large variety of different needs.

4.4.4.2 Sub-theme 2: Lack of support, training and sufficient resources

One common challenge that all the teachers faced when teaching learners with ASD was the lack of support, training, and sufficient resources. The teachers receive no support or training from the school and receive little to no support from the learners’ parents.

P1 stated, “Some parents are very supportive while others aren't, and they believe that it's up to the teacher to fix all the problems”.

P2 stated, “Well, there is normally no training or day to day support to empower me with inclusion of learners”.

P3 also stated, “We have a School Based Support Team meeting every Wednesday morning where learners with ASD are discussed but no training or additional resources are provided to assist me in teaching the learners with ASD in my class”.

P4 similarly stated, “Our school does not provide training or resources to deal with ASD in the classroom”.

It is therefore evident that the teachers are not receiving the support, training or resources they need in order to teach children with ASD.

4.4.4.3 Sub-theme 3: Dealing with fluctuating emotions

Navigating the emotional behaviours of learners with ASD requires a unique and empathetic approach, as understanding and effectively addressing their emotional needs is essential to creating a supportive and conducive learning environment.

P1 stated, “I think my biggest challenge is to accommodate all learners' diverse needs in my classroom as some struggle to manage their emotions and others need more attention than others”.

P2 also stated, “Learners seem to want things a certain way and become frustrated when other learners touch their toys or change the game”.

Thus, by understanding and empathetically addressing the emotional behaviours of learners with ASD, teachers play a pivotal role in creating inclusive and supportive learning environments that enable these learners to thrive academically and socially.

4.4.4.4 Sub-theme 4: Communicating

Being able to interact and communicate clearly and effectively with learners is very important for teachers to manage their classroom. However, it can sometimes be difficult to effectively communicate with learners with ASD.

P2 stated, “I would have to say my biggest challenge is to get my learners to interact with one another”.

P3 also mentioned, “I will say that there are issues when trying to communicate with them”.

Effective interaction and communication with learners are essential for teachers to manage their classrooms, but this can be particularly challenging with learners with ASD. One participant noted that the biggest challenge is getting these learners to interact with each other, while another highlighted issues in communicating with them. These difficulties underscore the need for specialized communication strategies to support learners with ASD in mainstream classrooms.

4.4.4.5 Sub-theme 5: Managing noise levels

A common trait of learners with ASD is that they are very sensitive to noise levels. It is important for teachers to keep this in mind when trying to accommodate learners with ASD in their classrooms.

P2 stated, “They do not enjoy physical activities, touch, or noisy environments”.

Similarly, P4 stated, “I would say that noise is the biggest barrier when trying to include learners with ASD in class”.

P4 further stated, “...sometimes the noise levels are too high, and they become easily over stimulated”

Learners with ASD are often very sensitive to noise levels, making it important for teachers to consider this when accommodating them in the classroom. One participant noted that these learners generally dislike physical activities, touch, and noisy environments. Another emphasized that noise is a significant barrier to inclusion, as high noise levels can easily overstimulate learners with ASD, hindering their ability to participate effectively..

4.4.5 Theme 5: Current teaching strategies used to socially include learners with ASD in mainstream schools

As part of this theme, the participant teachers were asked to elaborate on the current teaching strategies they use to socially include learners with ASD in their classrooms. The participants provided various strategies such as incorporating interests within the learning content, providing individual time and attention, and avoiding too many sensory-stimulating activities.

4.4.5.1 Sub-theme 1: Incorporate interests within the learning content

Incorporating the unique interests of learners with ASD into classroom learning content is a crucial and effective approach to enhancing their social inclusion and academic outcomes. Some of the participants indicated that learning these learners' interests and incorporating them into the learning content improves the social inclusion of these learners.

P1 stated, "I try to talk to them about their interests and try to incorporate their interests into the learning content".

P2 also mentioned, "I also try to make the content relatable to learners so that they find it interesting and enjoy it".

Incorporating the unique interests of learners with ASD into classroom learning content is highlighted as a pivotal strategy for promoting their social inclusion and academic success. Participants emphasised the effectiveness of tailoring learning content to these interests. One participant mentioned actively engaging with learners about their interests and integrating them into the curriculum, while another stressed the importance of making the content relatable and enjoyable for learners with ASD. This approach not only enhances engagement but also fosters a supportive learning environment that respects and accommodates individual differences.

4.4.5.2 Sub-theme 2: Provide individual time and attention

Providing individualised time and focussed attention to learners with ASD in mainstream classrooms is essential to cultivating their academic and social development.

Two of the participants indicated that they are trying to provide additional time and attention to the learners with ASD in their classroom.

P2 stated, “Well, I try to provide as much individual attention as possible”.

P3 also stated, “...and try to dedicate more time and attention to them”

Providing individualised time and focused attention to learners with ASD in mainstream classrooms is crucial for nurturing their academic and social growth. Participants acknowledged the importance of dedicating extra time and attention to these learners. One participant emphasized their efforts to provide individual attention whenever possible, while another similarly highlighted the commitment to allocating more time and attention to meet the unique needs of learners with ASD. This personalized approach aims to support their learning and social integration within the classroom environment.

+4.4.5.3 Sub-theme 3: Avoid too many sensory-stimulating activities

Recognising and accommodating the sensory sensitivities of learners with ASD is a pivotal aspect of creating an inclusive and supportive classroom environment. Some of the participants indicated that they are trying to incorporate more activities that do not include overwhelming sensory stimulation.

P1 stated, “Also, I try to avoid activities that don't involve too much sensory stimulation”.

P4 similarly stated, “I also have to remind them to tell you if there is something that bothers them like lights, noises, people, interactions, anything really because we are so focussed on the class as a whole that sometimes we also need a reminder”

Recognising and accommodating the sensory sensitivities of learners with ASD is crucial for fostering an inclusive classroom environment. Participants acknowledged the importance of minimising overwhelming sensory stimulation in their teaching practices. One participant mentioned avoiding activities that involve excessive sensory input to support learners with ASD. Another participant highlighted the need to regularly remind students to communicate any sensory discomfort, such as with lights or noises,

emphasising the challenge of balancing the needs of the whole class while ensuring individual comfort and engagement for learners with ASD. This approach aims to create a supportive environment where sensory sensitivities are respected and addressed proactively.

4.4.6 Theme 6: Further recommendations on how to socially include learners with ASD by the participant teachers

This theme analysed the recommendations of the participants on how to socially include learners with ASD. The participants made several different recommendations; however, the most common recommendations include raising more awareness of ASD and incorporating small group activities. These recommendations will be discussed under the following sub-themes.

4.4.6.1 Sub-theme 1: Raise more awareness of ASD

Many of the participants suggested raising awareness of ASD to assist the social incorporation of learners with ASD. As ASD is not commonly well-known, raising awareness of it will help assist others to understand it more and to treat learners with ASD better.

P1 stated, “I think I can raise more awareness by talking to and inform their peers about autism and how it may affect learners who are diagnosed with ASD”.

P2 mentioned, “... provide more awareness opportunities of autism through teaching and learning and by having autism themed days”.

P4 stated, “I think I can promote autism awareness at my school with posters, fun facts, and images in the classrooms to help raise awareness”.

P4 also stated, “Because the best way to include people is to break the stigma around ASD”.

Many participants highlighted the importance of raising awareness about ASD to improve the social inclusion of learners diagnosed with ASD. They suggested various methods to enhance understanding and acceptance among peers and the broader school community. Participant 1 emphasised the value of direct communication and education

about autism's impact on learners. Participant 2 proposed integrating autism awareness into teaching and organising themed days dedicated to the topic. Participant 4 suggested promoting awareness through visual aids like posters and images, aiming to combat stigma and foster a more inclusive environment in schools. These efforts collectively aim to increase empathy, reduce misconceptions, and support a more supportive atmosphere for learners with ASD.

4.4.6.2 Sub-theme 2: Incorporate small group activities

Some of the participants also suggested including learners with ASD in small group activities. When working in a small group, the other learners will be able to get to know the learners with ASD more intimately.

P2 mentioned, "... encourage small group work where each member gives a contribution".

P3 also mentioned, "Well, I guess I can incorporate more small group activities".

Several participants suggested integrating learners with ASD into small group activities as a means to foster better understanding and integration among their peers. Participant 2 proposed encouraging small group work where each member contributes, providing an opportunity for learners with ASD to interact closely with others. Similarly, Participant 3 acknowledged the potential of small group activities to enhance social interaction and inclusion for learners with ASD, suggesting a proactive approach to incorporating such activities into their teaching strategies. These efforts aim to create more inclusive classroom dynamics where learners with ASD can participate meaningfully and develop social skills alongside their peers.

4.4.6.3 Sub-theme 3: Exhibit patience and compassion

Some of the participants suggested that the teachers should be patient with and kind to learners with ASD. Teaching learners with ASD requires patience and it is important to be kind to these learners as many of the challenges they cause are not intentional.

P1 stated, "I will advise them to be patient and to be kind and to not hold prejudice against these learners".

Similarly, P4 also state, “Well I would say they should be kind and be informed”.

Participants emphasised the importance of patience and kindness from teachers when working with learners with ASD. They highlighted that the challenges faced by these learners are often unintentional, underscoring the need for understanding and support. Participant 1 advised teachers to approach interactions with patience and without prejudice towards learners with ASD. Similarly, Participant 4 echoed the sentiment, emphasizing the significance of kindness and being well-informed about the needs and characteristics of learners with ASD. These recommendations aim to create a supportive and inclusive classroom environment where learners with ASD feel valued and understood.

4.4.6.4 Sub-theme 4: Awareness

Another suggestion that was made by the participants was that teachers should be well-informed and should educate themselves on ASD. The best way to know how to teach learners with ASD is to understand what ASD is and how it affects learners differently.

P2 stated, “Well, I would say educate yourself on ASD”.

Similarly, P3 stated, “Do your research on ASD and give your utmost best to your learners”.

P4 also stated, “Well I would say they should be kind and be informed”.

Participants emphasised the importance of teachers being well-informed and educated about ASD to effectively support learners in mainstream classrooms. They suggested that understanding the characteristics and challenges associated with ASD is crucial for providing appropriate education and support. Participant 2 highlighted the need for educators to educate themselves about ASD, while Participant 3 encouraged thorough research and dedicated effort towards meeting the needs of learners with ASD. Participant 4 reiterated the importance of both kindness and being informed, emphasizing that informed teaching can significantly enhance the educational experience and outcomes for learners with ASD. These recommendations aim to promote inclusive teaching practices that cater to the diverse needs of all students in the classroom.

4.4.6.5 Sub-theme 5: Encourage collaborative group work

It was also advised by the participants that teachers should make use of collaborative group work. Group work can strengthen the relationships between learners and improve social inclusion among learners.

P2 stated, “Encourage collaborative group work, small classrooms, lots of individual attention, try to keep extra stimulate to a minimum”.

P3 also stated, “... incorporate more small group activities”.

Participants recommended that teachers incorporate collaborative group work as a strategy to enhance relationships among learners and promote social inclusion in classrooms. Participant 2 suggested encouraging collaborative group activities in smaller settings with ample individual attention and minimal sensory stimulation, aiming to facilitate meaningful interaction among students. Similarly, Participant 3 emphasised the benefits of small group activities for fostering social interaction and mutual understanding among learners. These suggestions underscore the potential of collaborative learning experiences to create supportive environments where students with diverse needs, including those with Autism Spectrum Disorder, can thrive academically and socially.

4.4.6.6 Sub-theme 6: Provide sufficient individual attention

All learners require attention, however learners with ASD often require more individual attention. It is very important for teachers to provide the necessary attention their learners require.

P1 stated, “... some struggle to manage their emotions and others need more attention than others”.

P2 mentioned, “... try to provide as much individual attention as possible”.

P2 further stated, “Encourage collaborative group work, small classrooms, lots of individual attention, try to keep extra stimulate to a minimum”.

Similarly, P3 mentioned, “... try to dedicate more time and attention to them”.

P4 stated, “Also, they should take the time to get to know each of the learners in their class and to build a relationship with them”.

Participants highlighted the importance of providing adequate individual attention to learners with ASD in mainstream classrooms. They noted that while all learners benefit from attention, those with ASD often require more personalised support. Participant 1 mentioned the varying needs of learners, including emotional management and additional attention requirements. Participant 2 reiterated the need to offer individualised attention, suggesting strategies like small classrooms and minimising sensory stimulation to better accommodate learners with ASD. Participant 3 echoed this sentiment, emphasising the dedication of time and attention to meet their unique needs. Participant 4 emphasized the importance of building relationships with each learner, underscoring the role of personalized attention in supporting their academic and social development effectively. These insights emphasise the necessity for tailored approaches to ensure inclusive and supportive learning environments for learners with ASD.

4.4.6.7 Sub-theme 7: Minimise sensory stimulation where possible

To create an inclusive and supportive classroom environment is a fundamental goal for teachers, especially when it comes to meeting the needs of learners with ASD. One essential aspect of this endeavour is to minimise sensory stimulation within the classroom, recognising the heightened sensitivities and sensory processing challenges that learners with ASD often experience. This proactive approach not only fosters a more comfortable and conducive learning space but also empowers learners with ASD to thrive academically and socially.

P1 stated, "... try to avoid activities that don't involve too much sensory stimulation".

P2 stated, "try to keep extra stimulate to a minimum".

P4 also stated, "... remind them to tell you if there is something that bothers them like lights, noises, people, interactions, anything".

Creating an inclusive and supportive classroom environment is crucial for teachers, especially in catering to the needs of learners with ASD. A key aspect of this effort involves minimising sensory stimulation within the classroom to accommodate the heightened sensitivities and sensory processing challenges often faced by these learners. Participants emphasised strategies such as avoiding activities that involve excessive

sensory input, keeping extra stimulation to a minimum, and encouraging learners to communicate discomfort with environmental factors like lights or noises. These proactive measures aim to create a more comfortable and conducive learning environment where learners with ASD can thrive both academically and socially, ensuring their needs are met effectively.

4.4.6.8 Sub-theme 8: Create an inclusive culture in the classroom

Many of the participants made recommendations about the creation of an accepting and inclusive culture in the classroom. The learners need to be informed on how to accept and treat their peers with ASD inside and outside the classroom.

P1 mentioned, "... inform their peers ... have a separate meeting with them and talk about how they can accommodate the learner and tell them that it's normal".

Similarly, P2 stated, "Educate the class on how to treat each other and create an inclusive culture in the classroom".

Participants emphasised the importance of fostering an accepting and inclusive culture in the classroom, particularly in educating peers on how to interact with and support learners with ASD. Participant 1 suggested holding separate meetings to inform classmates about accommodating learners with ASD and normalising their differences. Participant 2 echoed this sentiment, advocating for educating the entire class on respectful treatment and fostering inclusivity. These recommendations aim to promote understanding, empathy, and supportive behaviour among peers towards learners with ASD both inside and outside the classroom, ultimately creating a more inclusive learning environment.

4.4.6.9 Sub-theme 9: Build relationships with your learners and their parents

The participants suggested that teachers should try to build healthy relationships with their learners. A good relationship between teachers and learners is very important to sustain a functional classroom.

P1 stated, "... if she has a proper relationship with learners, she can also find out from them what if they need somethings".

P4 stated, “Also they should take the time to get to know each of the learners in their class and to build a relationship with them and their parents”.

P4 further stated, “Because only through relationships can stigmas be broken”.

Participants highlighted the significance of teachers cultivating strong relationships with their learners as essential for maintaining a functional and supportive classroom environment. Participant 1 emphasised that a good teacher-student relationship enables effective communication and understanding of learners' needs. Participant 4 similarly stressed the importance of teachers investing time in getting to know each learner and building relationships with both students and their parents. This approach fosters trust, enhances communication channels, and contributes to breaking down stigmas associated with learners, particularly those with unique needs such as ASD.

4.5 Conclusion

In conclusion, this chapter has delved into a comprehensive analysis of data collected through face-to-face semi-structured individual interviews with teachers and self-constructed open-ended questionnaires with learners. These findings have been examined using deductive thematic data analysis, each addressing the sub-research questions crucial to this study. Firstly, the study illuminated the significant barriers faced by learners with ASD in mainstream schools. These issues underscore the pressing need for targeted interventions.

Secondly, the chapter explored the facilitators to social inclusion experienced by learners with ASD in mainstream schools, highlighting the critical roles of supportive teachers and positive reinforcement. These factors were found to be instrumental in enhancing the social inclusion and behavioural development of learners with ASD. Thirdly, the study unveiled recommendations for improving the social incorporation of learners with ASD, as voiced by the participants. These recommendations included creating more autism-friendly classrooms, fostering increased friendships, reducing homework loads, encouraging creative expression, improving communication and understanding, and educating peers about ASD. Furthermore, the chapter delved into the challenges faced by teachers when instructing learners with ASD in mainstream schools,

citing issues related to accommodating diverse learning needs, insufficient support and resources, managing emotional behaviours, and addressing communication difficulties.

Moreover, the research examined the current teaching strategies employed to foster the social incorporation of learners with ASD in mainstream classrooms. These strategies encompassed a range of practices, from incorporating individual interests into the curriculum to providing personalised attention and ensuring learners are comfortable and well-supported in their educational environment. The chapter dissected further recommendations made by participants, with a focus on raising awareness of ASD and incorporating small group activities as common themes. Lastly, the study concluded with insights and advice from the participants for future teachers who will work with learners with ASD. These valuable suggestions serve as a guide for teachers entering this important field, emphasising the need for patience, flexibility, and a deep understanding of the unique needs of learners with ASD.

In essence, this chapter offers a comprehensive overview of the multifaceted landscape of social inclusion for learners with ASD in mainstream schools, providing valuable insights and recommendations that can inform future research and practical interventions in the field of special education.

Chapter 5: Discussion of findings

5.1 Introduction

In this section, the results previously examined in Chapter 4 will be comprehensively deliberated. The discussion of the findings is guided by the theoretical framework for this study and the reviewed literature. The findings will be discussed within their respective themes as analysed in Chapter 4. The topics encompass obstacles encountered by learners with ASD in mainstream educational settings, factors that promote social integration from the perspective of learners with ASD in such environments, additional suggestions for enhancing the social inclusion of learners with ASD as voiced by the learners themselves, hurdles confronted by teachers in instructing learners with ASD within mainstream schools, existing instructional methods employed for the social inclusion of learners with ASD, additional recommendations for fostering the social inclusion of learners with ASD, and guidance for future teachers teaching learners with ASD.

5.2 Barriers to social inclusion as experienced by learners with ASD in mainstream schools

In this segment, the hindrances to social integration encountered by learners with ASD in mainstream schools, as outlined in Chapter 4's findings, will be examined. This portion directly tackles the initial sub-research query: what impediments do learners with ASD face in achieving social inclusion within mainstream schools in Tshwane? The insights unveiled in Chapter 4 will be correlated with the existing literature explored in Chapter 2.

From the analysis, it was evident that the learners experience numerous barriers to social inclusion in their mainstream primary schools. Social isolation was a common barrier experienced by the participants. According to the participants' responses, they would typically have only one or two friends when compared to other children. This finding is supported by Bennett et al. (2018), who found that learners with ASD have fewer friends than their typical developing peers and use simpler descriptions to identify their friends.

Linked to the barrier of social isolation and having a limited number of friends, the participants indicated that initiating friendships was a significant barrier that was

experienced. Furthermore, learners with ASD indicated that they were unsure about how to interact with their typically developing peers as they see themselves as different from them. This finding is consistent with past research that found that learners with ASD often experience feelings of loneliness and struggle to navigate social interactions, leading to challenges in establishing and maintaining friendships (Bennett et al., 2018). Angus and Monson (2014) indicate that impairments in social interactions can be displayed through difficulties developing social friendships at a developmentally appropriate level.

Aversion to large groups was another social barrier experienced by learners with ASD in mainstream primary schools as it became clear that the participants do not like to be surrounded by a lot of people or to interact in large groups. Therefore, learners with ASD prefer smaller groups than large groups of people. According to Calder, Hill and Pellicano (2013), learners with ASD often dislike large groups due to the sensory overload and unpredictability that such settings can present. The noise and unfamiliar social dynamics in large groups may cause distress and anxiety for learners with ASD, leading them to seek calmer and more controlled environments.

Another barrier faced by the participants was the aversion to physical touch. These learners indicated that they do not like it when they are being touched, such as when they are given a hug by their peers. As discussed during Chapter 2, it is evident that learners with ASD demonstrate atypical sensitivity to tactile, proprioceptive, and painful stimuli. Therefore, high-functioning learners with ASD experience intense responses and increased anxiety when it comes to external tactile sensations (hypersensitivity), alongside reduced sensitivity to proprioception and pain stimuli (hyposensitivity) (Riquelme et al., 2016). Angus and Monson (2014) also indicate that learners with ASD display various specific characteristics which include hypersensitivity and hyposensitivity which need to be taken into consideration when ensuring the social inclusion of these learners in mainstream schools.

A lack of social participation was another common social barrier faced by the participants. When the participants were asked whether they participate in any social activities at school, it was clear that social participation was lacking among these participants. During the analysing process it was evident that these participants wanted

to be more involved in social activities but never got the opportunity to do so. The social embracement of learners with ASD, according to Locke et al. (2019), is still a concern as these learners frequently find themselves on the outskirts of their classroom's social circles and as they grow older, their engagement in social activities decreases. Angus and Monson (2014) also indicate that poor communication will result in learners with ASD being isolated and excluded from many social activities in mainstream schools.

5.3 Facilitators to social inclusion as experienced by learners with ASD in mainstream schools

In this part, we will delve into the factors that enhance social integration for learners with ASD in mainstream schools, as delineated in the findings of Chapter 4. This segment specifically addresses the second sub-research question: What fosters social inclusion for learners with ASD in mainstream schools in Tshwane? The insights from Chapter 4 will be correlated with the contemporary literature reviewed in Chapter 2. Through the analysis, it emerged that supportive teachers and positive reinforcement emerged as the primary catalysts for promoting the social inclusion of learners with ASD in mainstream primary schools within the Tshwane vicinity.

Supportive teachers play a pivotal role in nurturing learners' growth and fostering a positive learning environment. During the analysing process it became clear that the participants adore their teachers. According to the literature in Chapter 2, teachers play a crucial but often overlooked role in influencing the social development of learners in their classroom. Fujii (2014) states that teachers have two main functions: firstly, as authorities, they teach and reinforce social norms and expected behaviour; secondly, they act as facilitators of learner social interactions and peer dynamics. Teachers shape the classroom environment, setting expectations for peer interactions and communication. Thus, they can adapt interactions to support learners struggling socially and promoting engagement for all learners.

Healthy student-teacher relationships (STRs) are a crucial element in creating a positive classroom environment. The STRs of learners with ASD in regular mainstream schools can significantly impact their social inclusion in the classroom. High levels of conflict and dependency in STRs are associated with lower levels of social inclusion for

learners with ASD (Fujii, 2014). It is therefore important to understand the relationship between STRs and social functioning in learners with ASD when creating a supportive and inclusive classroom environment. Furthermore, teacher behaviours play a crucial role in creating a healthy classroom climate which directly impacts learners' social, emotional and academic outcomes. A positive classroom environment with emotional and instructional support leads to higher social competence and greater self-control among learners (Fujii, 2014). Thus, emotional support, low levels of anger, high responsiveness to learner needs, and positive regard for different perspectives create a warm and supportive environment that fosters positive peer relationships.

Positive reinforcement serves as a fundamental tool for motivating learners and encouraging the acquisition of desired skills and behaviours. Positive reinforcement holds particular significance for learners with ASD, as it can provide essential support in shaping and reinforcing adaptive behaviours and skills within their unique individual learning characteristics. Positive reinforcement was another facilitator to the social inclusion experienced by learners with ASD in mainstream primary schools in the Tshwane region. According to the participants' responses, it was evident that being rewarded increased the participants' ability to enjoy attending school.

Salceanu (2020) states that the Milieu technique is an effective naturalistic teaching strategy of interaction which involves using games, reinforcing communication efforts, utilising inherent rewards, and integrating the natural environment. DeLeon et al. (2014) agree with this statement as they indicate that teachers employ positive reinforcement within educational and therapeutic settings for learners with ASD as these techniques aim to enhance favourable behaviours while decreasing the occurrence of unwanted behaviours.

5.4 Further recommendations for the social inclusion of learners with ASD

During this section, participant learners and teachers provided recommendations they found important to implement so that learners with ASD can be socially included in their schools. This was important as it enabled learners to provide strategies that are important to them so that they can feel included. These findings will be linked to the current literature discussed in Chapter 2. During the analysis process, all participants were allowed to

provide recommendations to teachers on how to better accommodate and socially include them within mainstream school activities. The recommendations that were provided included creating classrooms that are better suited for learners with autism, increasing friendships, improving communication and understanding, and educating peers.

Creating classrooms that are better suited for learners with autism in mainstream primary schools was a recommendation made by the learners with ASD. To truly achieve inclusion, it is imperative that we make our educational environments more accommodating to learners with ASD. This involves not only raising awareness about ASD but also implementing practical strategies and accommodations that foster a supportive and nurturing learning atmosphere. The participants indicated that dim lights and more comfortable chairs will make the classroom setting more comfortable for them.

Classroom organisation is a crucial strategy to consider when teaching learners with ASD. Lindsay et al. (2014) indicates that creating a fully inclusive classroom will improve these learners' academic, social, and emotional growth as well as create a feeling of acceptance of the learner with ASD. Landor and Perepa (2017) acknowledge that modifying the classroom environment can have positive effects in fostering the social incorporation of learners with ASD. Given that these individuals thrive in environments characterised by consistency and structure, creating environments that are better suited for learners with autism aims to alleviate stress and facilitate their social adaptation.

During the analysing process it was found that a lack of friends is a current barrier faced by learners with ASD in mainstream primary schools. Therefore, increasing their friendships and encouraging them to interact with their peers will improve the social embracement of learners with ASD in mainstream schools. The participants recommended that teachers should make use of strategies to increase the quality and quantity of their friendships as it will improve their social inclusion in mainstream schools.

In mainstream primary schools, fostering friendships among learners with ASD is a profound undertaking that carries far-reaching benefits for all involved. Recognising the importance of nurturing friendships among learners with ASD is pivotal in promoting a truly inclusive and equitable educational environment. By emphasising the importance of inclusive friendships, we can pave the way for a more compassionate and harmonious

learning environment that enriches the educational experience for everyone involved. According to Bennett et al (2018) creating inclusive environments that accommodate diverse communication styles and interests can foster positive social interactions and friendships for learners with ASD. These authors indicate that friendships have significant positive outcomes, providing affection, trust, companionship, and emotional stability. It is thus clear that developing social relationships helps individuals feel a sense of belonging and affiliation with their community, which is crucial for overall well-being and happiness.

Another recommendation made by the participants was that of improving communication skills and understanding. When the participants were asked what could make school better for them, they indicated that better communication skills and a better understanding of their peers would improve their social experience. In mainstream primary schools, the endeavour to enhance communication and deepen understanding among learners with ASD represents an essential commitment to inclusive education. Effective communication and comprehension are foundational pillars of not only academic success but also social integration and personal growth. Recognising the significance of improving these aspects for learners with ASD is instrumental in creating an inclusive, supportive, and enriching classroom environment.

According to Angus and Monson (2014), communication is a challenge faced by learners with ASD as it is extremely important in all daily life situations and is a key component in all relationships. Majoko (2016) agrees as she indicates that a lack of communication skills is one of the identified reasons for the social exclusion of learners with ASD in mainstream schools. Impairments in social interactions can also be noticed through the lack of both understanding as well as the use of non-verbal communication. Mamas et al. (2021) agree, indicating that learners with ASD experience challenges such as being unaware of other people's feelings as well as with verbal and non-verbal communication skills. Bennett et al. (2018) explains that developing friendships involves mutual understanding and communication, but social skills interventions typically focus solely on the learner with ASD and may not address the core skills required for relationships.

Thus, as Fujii (2014) indicates, it is the teachers' responsibility to shape the classroom environment, setting expectations for peer interactions and communication. Salceanu (2020) emphasises the importance of cultivating instinctive communication skills including voice tone, rhythm, gestures, posture, and suitable visual engagement when engaged in direct person-to-person dialogue, constructing a cognitive framework for effective speech interaction; fostering the drive to engage with unfamiliar individuals across various conversations; and nurturing cognitive growth.

Educating typically developing learners about their peers with ASD in mainstream schools is important as it contributes to the social incorporation of learners with ASD. In our increasingly diverse and inclusive society, educating typically developing learners about their peers with ASD has become not only a matter of importance but also a moral imperative. To truly create inclusive classrooms, it is crucial that we not only support learners with ASD but also equip their neurotypical peers with the knowledge and understanding necessary to foster empathy and acceptance. According to the findings, the participants indicated that educating their peers would improve their social experience at school.

Koegel et al. (2012) indicate that alternative approaches such as peer-mediated interventions can be used to educate the typically developing peers of learners with ASD. This means that peer-mediated methods entail instructing typically developing learners on how to demonstrate and encourage specific social skills in learners with ASD. For instance, a learner could be trained to prompt a peer with ASD to request a turn on the playground swing and assist in reminding them about turn-taking. This approach allows for the simultaneous targeting of multiple skills, such as turn-taking and verbal communication. Numerous studies have yielded positive outcomes for peer-mediated interventions implemented in school settings, suggesting that these methods are particularly well-suited for use in inclusive classrooms. Similarly, Locke et al. (2019) identify two teaching strategies that have proven their effectiveness in improving the social skills of learners with ASD. These strategies include adult-facilitated and peer-mediated models. These authors explain that peer-mediated interventions involve instructing typically developing learners to engage with their peers with ASD.

As previously discussed, addressing the needs of learners with ASD is of utmost importance, therefore during the analysis process valuable insights were gathered from participants who have provided recommendations on how teachers can enhance the social embracement of learners with ASD. One prevalent recommendation was to raise greater awareness of ASD. To truly embrace the principles of inclusive education, it is imperative that we not only welcome learners with ASD into mainstream classrooms but also actively raise awareness about their experiences and needs. This entails recognising the importance of cultivating a supportive and empathetic environment, both for learners with ASD and their neurotypical peers. According to the findings of Locke et al. (2010), raising awareness regarding the challenges faced by learners with ASD, as well as incorporating social skills training initiatives and utilising the assistance of learner support assistants (LSAs), have proven to be effective strategies in improving the social incorporation of learners with ASD in mainstream schools.

Another frequently suggested recommendation was the integration of small group activities. As teachers, it is crucial to acknowledge that there is no universal teaching method that fits all learners, which highlights the importance of providing personalised support. One effective approach in this endeavour involves incorporating small group activities customised to suit the needs of learners with ASD. These activities provide a structured and supportive environment that promotes social interaction, communication, and skill development, all while accommodating the individualised pace and preferences of each learner. Learners with ASD often exhibit a reluctance to engage in large group settings, primarily due to sensory overload and the unpredictability associated with such environments, as noted in the study by Calder et al. (2013). Furthermore, the noise and unfamiliar social dynamics inherent in large groups can trigger distress and anxiety in learners with ASD. Thus, the integration of small group activities serves to alleviate stress and anxiety for these individuals.

Furthermore, the participants were given the opportunity to provide recommendations to future teachers on how to better accommodate and socially include learners with ASD within mainstream schools. The advice provided included suggestions such as being

patient, kind, informed and educated as well as encouraging collaborative group work and minimising sensory stimulation.

Participants indicated that future teachers should be patient and kind when teaching learners with ASD in primary mainstream schools. To effectively support and educate learners with ASD, teachers must not only possess pedagogical expertise but also exemplify qualities of patience and kindness. Learners with ASD have various characteristics and unique needs and therefore teachers need to be patient and kind when interacting with them (Angus & Monson, 2014). Teachers often have difficulties meeting the needs of their learners with ASD (Humphrey & Lewis, 2008; Symes & Humphrey, 2010). Thus, it is important that teachers need to be patient with learners with ASD. This will help the teacher to meet the diverse needs of the learners with ASD in their classrooms.

For the teacher to be patient they need to understand their learners with ASD. This is why it is important for teachers to be informed and educated about ASD. The participants suggested that future teachers should be informed and always educated. To effectively support and educate learners with ASD, teachers must not only possess pedagogical expertise but also be well-informed and educated about this neurodevelopmental condition. According to Roberts and Simpson (2016), teachers in mainstream schools lack the necessary knowledge and understanding of ASD when teaching learners with ASD. Lindsay et al. (2013) agrees that teachers in mainstream schools do not understand ASD due to a lack of available training and supporting resources.

Another recommendation was to encourage collaborative group work. This will allow the typically developing learners to work and interact with their peers with ASD which will improve their understanding and acceptance of ASD. This will assist with the social incorporation of learners with ASD as they often experience difficulties in establishing and maintaining friendships (Bennett et al., 2018). However, it is important to remember that the groups must be relatively small as learners with ASD usually dislike large groups due to the sensory overload, too much noise and unfamiliar social dynamics which can cause distress and anxiety for learners with ASD (Calder et al., 2013).

Furthermore, it was recommended that teachers try to reduce sensory stimulation where possible. Learners with ASD may experience varied responses to sensory stimuli as they are hypersensitive which may lead them to seek calmer and more controlled environments (Salceanu, 2020; Calder, et al., 2013). It is important to note that learners with ASD are also sensitive to tactile, proprioceptive, and painful stimuli which also need to be avoided as much as possible (Riquelme et al., 2016).

5.5 Barriers faced by teachers when teaching learners with ASD in mainstream schools

In this section, we will explore the challenges encountered by teachers in instructing learners with ASD in mainstream schools, as revealed in the findings of Chapter 4. This section directly engages with the third sub-research question: What are the experiences of teachers regarding the obstacles to social inclusion of learners with ASD in mainstream schools in Tshwane? These findings will be correlated with the contemporary literature discussed in Chapter 2.

During the analysis process, several barriers were identified. One common barrier was the difficulty of accommodating the diverse learning needs of learners with ASD. Based on the responses from the participants, it was clear that accommodating learners is important, however it can be difficult when there are various needs that need to be considered. This is made even more difficult since learners with ASD are on a spectrum with a large variety of different needs. As outlined in Chapter 2's literature review, teachers in mainstream schools encounter difficulties in catering to the requirements of learners with ASD (Humphrey & Lewis, 2008; Symes & Humphrey, 2010). Lindsay et al. (2013) further asserts that teachers in mainstream settings confront significant hurdles in establishing an inclusive atmosphere for learners. Roberts and Simpson (2016) support this notion, highlighting teachers' inadequate knowledge and comprehension of ASD, hindering their ability to effectively accommodate learners with ASD. This is also due to a lack of training and support which is another common barrier faced by teachers.

When considering the responses from the participants it is evident that the teachers are not receiving the support, training or resources they need in order to teach children with ASD. Weber (2013) declares that the lack of support is a great challenge faced by

teachers when teaching learners with ASD in their classrooms. This lack of support or training leaves teachers in mainstream schools feeling unprepared to support learners with ASD (Lindsay et al., 2013). Thus, it shows how important adequate support is for teachers, especially when teaching learners with ASD.

Another barrier that was identified was the trouble of dealing with the fluctuating emotions of learners with ASD. Learners with ASD display various specific characteristics such as repetitive behaviours, hypersensitivity as well as displays of aggression, distress, or frustration (Angus & Monson, 2014; Salceanu, 2020). The social behaviours of learners with ASD have a significant impact on the student-teacher relationship and the teacher's stress levels (Bolourian et al., 2022). Thus, by understanding and empathetically addressing the emotional behaviours of learners with ASD, teachers play a pivotal role in creating inclusive and supportive learning environments that enable these learners to thrive academically and socially.

It is important for teachers to be able to effectively communicate with their learners. However, communication is another barrier which was identified by the participants as it is a daily challenge for learners with ASD (Angus & Monson, 2014). Mamas et al. (2021) indicate that learners with ASD experience difficulties with verbal and non-verbal communication skills. A lack of effective communication in the classroom can cause several challenges.

Another barrier that was identified was managing noise levels in the classroom. In the field of education, teachers bear the crucial responsibility of establishing an environment that nurtures learning, engagement, and the development of learners. Nevertheless, within the dynamic interactions and diverse requirements of the classroom, teachers often wrestle with a pervasive issue: the management of noise levels. The classroom, frequently filled with youthful enthusiasm and active participation, can transform into a hub of noise and commotion that, if not effectively controlled, might hinder the learning process. Acknowledging and proactively addressing the issue of noise control in the classroom allows teachers to cultivate an environment in which every learner can excel academically, while also promoting a culture of respect, engagement, and inclusivity. For learners with ASD, elevated noise levels in classrooms can lead to distress and anxiety

(Calder et al., 2013). This is primarily because individuals with ASD are highly sensitive to external sensory and tactile stimuli (Salceanu, 2020).

5.6 Current teaching strategies used to socially include learners with ASD in mainstream schools

In this segment, we will explore the prevailing instructional approaches employed to integrate learners with ASD socially into mainstream schools, as delineated in the findings of Chapter 4. This section specifically focuses on the fifth sub-research question: What teaching strategies are utilized to incorporate learners with ASD into social activities in mainstream schools in Tshwane? These findings will be juxtaposed with the contemporary literature reviewed in Chapter 2.

The participants were asked to elaborate on their current teaching strategies towards the social embracement of learners with ASD in their classrooms. The participants provided various strategies such as incorporating interests within the learning content, informing learners ahead of time of an activity, and avoiding too many sensory-stimulating activities.

Incorporating the unique interests of learners with ASD into classroom learning content is a crucial and effective approach to enhancing their social inclusion and academic outcomes. Several participants noted that familiarizing oneself with these learners' interests and integrating them into the educational material enhances the social integration of learners with ASD. In accordance with the United Nations Educational, Scientific and Cultural Organization (UNESCO) (1994), inclusive education entails modifications and adjustments in educational material, methodologies, structures, and teaching approaches to encompass and educate all learners. Nel, Nel, and Hugo (2016) further suggest that to establish an inclusive milieu, certain practices need to be enacted. Among these practices is the adaptation of the curriculum, learning activities, content, assessment methods, and classroom environment to cater to and accommodate the needs of all learners. Therefore, according to Bennett et al. (2018), creating inclusive environments that accommodate diverse communication styles and interests can foster positive social interactions and friendships for learners with ASD.

Proactive communication and preparation play a fundamental role in providing learners with ASD a conducive learning environment as they can positively impact their engagement and overall educational experience. The participants voiced that informing a learner ahead of time of an activity is an effective teaching strategy when teaching learners with ASD in mainstream schools. According to Hume et al. (2014), one straightforward method is to offer early spoken notice, such as saying, "We'll be moving to the music activity in two minutes", thus directing the verbal notification not only to the learner with ASD but also to the entire group. Additionally, employing other auditory signals like timers, music, or singing can facilitate smoother and quicker transitions. These authors indicate that one can also utilise applications for advance warnings; for instance, iPrompts offers a countdown timer with an accompanying image of the activity and a decreasing bar to indicate the passing of time.

Furthermore, a few of the participants indicated that they are trying to incorporate more activities that do not include overwhelming sensory stimulation. In the realm of education and support for learners with ASD, the significance of sensory sensitivity cannot be overstated. Many learners with ASD experience heightened sensory sensitivities, making their experiences in various environments considerably different from those of their neurotypical peers. As teachers it is essential to recognise and address these sensory challenges effectively. One approach to creating more inclusive and accommodating learning environments for learners with ASD is to minimise sensory-stimulating activities. By doing so, we can create learning spaces that are more conducive to the unique sensory needs of these learners, fostering a more comfortable and productive educational experience.

According to Salceanu (2020), one of the multiple characteristics of learners with ASD is that they experience various responses to sensory stimuli. Similarly, Riquelme et al. (2016) indicate that learners with ASD also demonstrate atypical sensitivity to tactile, proprioceptive, and painful stimuli. Therefore, high-functioning learners with ASD experience intense responses and increased anxiety when it comes to external tactile sensations (hypersensitivity), alongside reduced sensitivity to proprioception and pain stimuli (hyposensitivity).

5.7 Limitations of the study

During this study, various limitations were identified. The first limitation experienced during this study was to find suitable mainstream primary schools in Tshwane that accommodate learners with ASD. Most mainstream primary schools in Tshwane only accommodate learners with ADHD or mild disabilities. Therefore, the number of schools that could be used for this study was limited as only two mainstream primary schools of the few mainstream primary schools in Tshwane, which accommodate learners with ASD, agreed to participate in the study. Due to the challenge of finding suitable mainstream primary schools to participate in the study, a lack of time became a crucial limitation to the study. The process of finding suitable mainstream primary schools consumed a large amount of time and therefore only a small amount of time was left to schedule interviews and complete the data collection necessary for this study.

Another limitation experienced during this study was the willingness of participants to participate. One of the schools only allowed interviews with the teachers as they did not want to expose the learners with ASD to the study. This impacted the results of the study as only two learners with ASD and four teachers were able to participate in total. During the data collection, it was evident that some of the teachers were hesitant to open up in the beginning of the interviews but as time went on, they became more confident in answering the questions.

5.8 Recommendations for the social inclusion of learners with ASD

During this section, the valuable insights and recommendations put forth by both the learners with ASD as well as their teachers to improve the socially include of learners with ASD in mainstream primary schools will be discussed. The ideas of learners with ASD, as well as those of their dedicated teachers, offer invaluable perspectives on effective methods of improving social inclusion in mainstream schools. By making use of these suggestions, we can build a more supportive, empathetic, and accommodating educational environment where all learners, regardless of their neurodiversity, can flourish and reach their full potential.

5.8.1 Recommendations by learners

An essential recommendation from the learners with ASD themselves highlights the importance of making educational environments more accommodating for them. These accommodations can include adjustments such as dimming lights and providing comfortable seating to create a favourable classroom environment for learners with ASD.

A further recommendation is improving classroom organisation as this plays a key role in promoting academic, social, and emotional growth among learners with ASD and can help develop a sense of acceptance and reduce stress by providing the structure and consistency they require.

An identified challenge for learners with ASD in mainstream primary schools is a lack of friendships, which hinders their social inclusion. Recommendations from participants stressed the importance of strategies aimed at increasing the quality and quantity of friendships among learners with ASD.

Enhancing communication skills and understanding stands out as another important recommendation. Learners with ASD express the need for improved communication and better peer understanding to enhance their social experience in mainstream primary schools. Effective communication and comprehension are not only crucial for academic success but also for social integration and personal growth. Additionally, educating typically developed learners about their peers with ASD becomes essential for developing empathy and acceptance within increasingly diverse and inclusive classrooms.

5.8.2 Recommendations by teachers

A prominent recommendation by teachers is to raise awareness of ASD in schools. This recommendation highlights the importance of not only integrating learners with ASD into mainstream classrooms but also actively promoting awareness of their unique experiences and needs. This can help create a supportive and empathetic environment for both learners with ASD and their neurotypical peers. The participants suggested that this can be achieved with the implementation of training programmes accompanied by supportive documentation that teaches about ASD.

Participants also suggest encouraging collaborative group work as a means of fostering understanding and acceptance among typically developing peers and learners with ASD. They state that this approach can improve social inclusion by addressing the challenges often faced by learners with ASD in establishing and maintaining friendships. However, they also emphasised that such groups should be relatively small, given that learners with ASD tend to be averse to large group settings due to sensory overload and excessive noise which can lead to distress and anxiety.

Furthermore, participants recommended reducing sensory stimulation when possible as learners with ASD often exhibit hypersensitivity to various sensory stimuli. Creating calmer and more controlled environments by avoiding excessive stimuli is essential. Additionally, participants advise future teachers to exhibit patience, kindness, and understanding when working with learners with ASD. These qualities are crucial in accommodating the unique characteristics and needs of learners with ASD, which can be quite unpredictable and demanding.

By implementing these recommendations, teachers can take significant steps towards improving the social inclusion and overall educational experience of learners with ASD in mainstream schools.

5.9 Recommendations for future research

During this section, the recommendations aimed at guiding future studies on fostering social incorporation of learners with ASD in mainstream schools in South Africa will be discussed.

In the current research study, data was gathered from a small sample of teachers and learners from only two mainstream primary schools in Tshwane. Consequently, this provided limited results, whereas a more comprehensive examination encompassing a diverse range of schools throughout the country, along with increased participation, could offer a more profound understanding of the current research problem.

Also, data was only gathered from teachers and learners. It could be beneficial if a wider range of participants, such as parents of learners, principals of the schools or peers

of the learners with ASD could be interviewed. This would allow for greater insight into the current research problem as well as more extensive information on possible solutions.

Furthermore, the learners that participated in this study were both high-functioning learners with ASD. As discussed previously, ASD is a spectrum disorder with varying degrees of severity. Therefore, the inclusion of a more diverse group of learners with varying degrees of ASD would provide more thorough results for future research studies.

5.10 Research contributions

This study on social inclusion for learners with ASD in mainstream primary schools in the South African context makes several significant research contributions. Through a thorough analysis of findings connected to existing literature, it highlights the multifaceted challenges faced by these learners, such as difficulties in forming friendships and hypersensitivity to sensory stimuli. Importantly, it emphasises the role of supportive teachers and positive reinforcement as key facilitators for inclusion. Furthermore, the study incorporates recommendations from both learners and teachers, shedding light on practical strategies and interventions, such as creating autism-friendly classrooms and promoting collaborative group work. Despite encountering limitations, such as sample size constraints, the study provides valuable insights and offers a roadmap for future research and practical implementation, aiming to foster more empathetic, inclusive, and supportive educational environments where all learners, regardless of their neurodiversity, can thrive.

5.11 Conclusion

To summarise, this chapter extensively explored the findings derived from the analysis of data outlined in Chapter 4. These findings were meticulously scrutinized and linked to pertinent literature expounded upon in Chapter 2. The chapter encompassed a broad spectrum of subjects, spanning from the impediments experienced by learners with ASD in mainstream educational settings to the factors facilitating social inclusion, insights provided by learners themselves, and the instructional strategies utilized alongside the challenges confronted by teachers.

Among the prominent barriers faced by learners with ASD are the difficulties in forming friendships, aversion to large groups, and hypersensitivity to sensory stimuli. These findings resonate with the existing literature, emphasising the need to address these challenges for the social incorporation of learners with ASD. Conversely, supportive teachers and positive reinforcement emerged as significant facilitators for the social embracement of learners with ASD. The role of teachers in nurturing a positive classroom environment and the importance of healthy student-teacher relationships has been emphasised in the literature as well.

Further recommendations from learners themselves included creating more autism-friendly classrooms, increasing friendships, improving communication and understanding, and educating peers about ASD. These recommendations align with research highlighting the significance of awareness, small group activities, effective communication, and peer-mediated interventions. Additionally, teachers shared their experiences, identifying barriers such as the diverse learning needs of learners with ASD, lack of training and support, emotional behaviours, and communication challenges. These challenges have been well-documented in the literature, emphasising the necessity of addressing teacher preparedness and support.

Current teaching strategies discussed by the participants included incorporating learners' interests, providing advance notice of activities, and minimising sensory stimulation. These strategies align with inclusive education principles and cater to the unique needs of learners with ASD. Finally, advice to future teachers emphasised the importance of patience, kindness, being well-informed and educated about ASD, promoting collaborative group work, and minimising sensory stimulation. These recommendations echo the essential qualities and knowledge required to effectively support learners with ASD in mainstream schools.

Fundamentally, this chapter's thorough examination of findings illuminates the complex array of challenges and possibilities entwined with the social inclusion of learners with ASD in mainstream primary education. Bridging these findings with the current body of literature offers invaluable perspectives for teachers and researchers dedicated to cultivating inclusive and nurturing educational environments for every learner.

This research study has taken a comprehensive journey into the realm of social inclusion for learners with ASD in mainstream primary schools in the South African context. Each chapter has contributed a vital piece to the puzzle of understanding and enhancing the educational experience for these learners.

Despite the wealth of knowledge gained, this study encountered limitations. Finding suitable schools accommodating learners with ASD was challenging, leading to a limited sample size. Time constraints further restricted data collection and participant engagement. Nevertheless, the recommendations presented in this chapter offer a roadmap for improving social inclusion. Learners with ASD emphasised the importance of accommodating environments, improved organisation, fostering friendships, and enhancing communication. Teachers highlighted the need for raising awareness, encouraging collaborative group work, reducing sensory stimulation, and embodying patience and kindness. Looking to the future, research in this field should aim for a more diverse range of schools and participants across South Africa. Including parents, principals, and peers would provide a broader perspective, while encompassing learners with varying degrees of ASD would yield more comprehensive results.

In closing, this research study contributes to the ongoing dialogue on social inclusion for learners with ASD, offering valuable insights and recommendations. By paying attention to the voices of these learners and their dedicated teachers, we can work towards creating a more empathetic, inclusive, and supportive educational environment where all learners, regardless of their neurodiversity, can thrive and reach their full potential.

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Turnitin Similarity Report

Prof. Mampane, M. R.  3 May 2024

Social inclusion of learners with Autism Spectrum Disorder
within South African primary mainstream schools.docx

ORIGINALITY REPORT

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SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Ameen, Nausheen. "Exploring Teaching Strategies for Children With Autism", University of Johannesburg (South Africa), 2021 Publication	1%
2	scholar.sun.ac.za Internet Source	1%
3	repository.nwu.ac.za Internet Source	<1%
4	www.researchgate.net Internet Source	<1%
5	Jennifer Stephenson, Leah Browne, Mark Carter, Trevor Clark et al. "Facilitators and Barriers to Inclusion of Students With Autism Spectrum Disorder: Parent, Teacher, and Principal Perspectives", Australasian Journal of Special and Inclusive Education, 2020 Publication	<1%
6	repository.unam.edu.na Internet Source	<1%

Appendices

Appendix A: GDE Research request form



GAUTENG PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

For admin. use only:

Ref. no.:

GDE RESEARCH REQUEST FORM

REQUEST TO CONDUCT RESEARCH IN INSTITUTIONS AND/OR OFFICES OF THE GAUTENG DEPARTMENT OF EDUCATION

1. PARTICULARS OF THE RESEARCHER

1.1	Details of the Researcher	
	Surname and Initials:	Alberts L
	First Name/s:	Linelle
	Title (Prof / Dr / Mr / Mrs / Ms):	Ms
	Student Number (if relevant):	16310242
	SA ID Number:	9607190027089
	Work permit no. (If not SA citizen)	

1.2	Private Contact Details	
Home Address	Postal Address (if different)	
226 Steger street		
Groenkloof		
Pretoria		
Postal Code: 0027	Postal Code:	
Tel:	Cell: 0726980190	
Fax:	E-mail: misslalberts@gmail.com	

2. PURPOSE & DETAILS OF THE PROPOSED RESEARCH

2.1	Purpose of the Research (Place cross where appropriate)	
Undergraduate Study – Self		
Postgraduate Study – Self	x	
Private Company/Agency – Commissioned by Provincial Government or Department		
Private Research by Independent Researcher		
Non-Governmental Organisation		
National Department of Education		
Commissions and Committees		
Independent Research Agencies		
Statutory Research Agencies		
Higher Education Institutions only		
2.2	Full title of Thesis / Dissertation / Research Project	

The social inclusion of learners with Autism Spectrum Disorder within primary mainstream schools in a South African context	
2.3	Value of the Research to Education (Attach Research Proposal)
Refer to section 3 in research proposal	
2.4	Date
<i>Envisaged date of completion of research in GDE Institutions</i>	11 April 2023
<i>Envisaged date of submission of Research Report and Research Summary to GDE:</i>	30 November 2023
2.5	Student and Postgraduate Enrolment Particulars
Name of institution where enrolled:	University of Pretoria
Degree / Qualification:	Master's I degree
Faculty and Discipline / Area of Study:	Learning support, Guidance, and Counselling.
Name of Supervisor / Promoter:	Dr Maria Ramaahlo Prof Ruth Mampane
2.6	Employer
Name of Organisation:	
Position in Organisation:	
Head of Organisation:	
Street Address:	
Postal Code:	
Telephone Number (Code + Ext):	
Fax Number:	
E-mail:	

2.7	PERSAL Number (GDE employees only)
-----	-------------------------------------

--	--	--	--	--	--	--	--

3. PROPOSED RESEARCH METHOD/S

(Please indicate by placing a cross in the appropriate block whether the following modes would be adopted)

3.1 Questionnaire/s (If Yes, supply copies of each to be used)

YES	x	NO	
-----	---	----	--

3.2 Interview/s (If Yes, provide copies of each schedule)

YES	x	NO	
-----	---	----	--

3.3 Use of official documents

YES		NO	X
If Yes, please specify the document/s:			

3.4 Workshop/s / Group Discussions (If Yes, Supply details)

YES		NO	X
-----	--	----	---

3.5 Standardised Tests (e.g. Psychometric Tests)

YES		NO	X
If Yes, please specify the test/s to be used and provide a copy/ies			

4. INSTITUTIONS TO BE INVOLVED IN THE RESEARCH

4.1 Type and NUMBER of Institutions (Please indicate by placing a cross alongside all types of institutions to be researched)

INSTITUTIONS	Write here	NUMBER
Primary Schools X		2
Secondary Schools		
ABET Centres		
ECD Sites		
LSEN Schools		
Further Education & Training Institutions		
Districts and / or Head Office		

4.2 Name/s of institutions to be researched (Please complete on a separate sheet if space is found to be insufficient)

Name/s of Institution/s

--

- 4.3** District/s where the study is to be conducted. (Please indicate by placing a cross alongside the relevant district/s)

District/s			
Ekurhuleni North		Ekurhuleni South	
Gauteng East		Gauteng North	
Gauteng West		Johannesburg Central	
Johannesburg East		Johannesburg North	
Johannesburg South		Johannesburg West	
Sedibeng East		Sedibeng West	
Tshwane North		Tshwane South	
Tshwane West	x		

If Head Office/s (Please indicate Directorate/s)

- 4.4** Number of learners to be involved per school (Please indicate the number by gender)

Grade	1		2		3		4		5		6	
Gender	B	G	B	G	B	G	B	G	B	G	B	
Number											1	

During school hours (for limited observation only)	x	After School Hours	
--	---	--------------------	--

4.9 School term/s during which the research would be undertaken


First Term	x	Second Term		Third Term	
------------	---	-------------	--	------------	--

CONDITIONS FOR CONDUCTING RESEARCH IN GDE

Permission may be granted to proceed with the above study subject to the conditions listed below being met and permission may be withdrawn should any of these conditions be flouted:

1. The District/Head Office Senior Manager/s concerned, the Principal/s and the chairperson/s of the School Governing Body (SGB.) must be presented with a copy of this letter.
2. The Researcher will make every effort to obtain the goodwill and cooperation of the GDE District officials, principals, SGBs, teachers, parents and learners involved. Participation is voluntary and additional remuneration will not be paid;
3. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal and/or Director must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
4. Research may only commence from the second week of February and must be concluded by the end of the THIRD quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.

5. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
6. It is the researcher's responsibility to obtain written consent from the SGB/s; principal/s, teacher/s, parents and learners, as applicable, before commencing with research.
7. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institution/s, staff and/or the office/s visited for supplying such resources.
8. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research title, report or summary.
9. On completion of the study the researcher must supply the Director: Education Research and Knowledge Management, with electronic copies of the Research Report, Thesis, Dissertation as well as a Research Summary (on the GDE Summary template).
10. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned;
11. Should the researcher have been involved with research at a school and/or a district/head office level, the Director/s and school/s concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

DECLARATION BY THE RESEARCHER	
1. I declare that all statements made by myself in this application are true and accurate.	
2. I accept the conditions associated with the granting of approval to conduct research and undertake to abide by them.	
Signature:	
Date:	12/12/2022
DECLARATION BY SUPERVISOR / PROMOTER / LECTURER	
I declare that: (Name of Researcher).....	
1. is enrolled at the institution / employed by the organisation to which the undersigned is attached.	
<p>2. The questionnaires / structured interviews / tests meet the criteria of:</p> <ul style="list-style-type: none"> • Educational Accountability; • Proper Research Design; • Sensitivity towards Participants; • Correct Content and Terminology; • Acceptable Grammar; • Absence of Non-essential / Superfluous items; • Ethical clearance 	
3. I will ensure that after successful completion of the degree / project an electronic copy of the Research Report / Thesis / Dissertation and a Research Summary (on the GDE template) will be sent by the researcher to the GDE.	
Surname:	
First Name/s:	
Institution / Organisation:	
Faculty / Department (where relevant):	
Telephone:	
E-mail:	

Signature:	
Date:	

GDE ANNEXURE A: ADDITIONAL INFORMATION FOR GROUP RESEARCH

This information must be completed by **every** researcher/ student who will be visiting GDE Institutions for research purposes.

By signing this declaration, the researcher / students accepts the conditions associated with the granting of approval to conduct research in GDE Institutions and undertakes to abide by them.

Supervisor/ Promoter / Lecturer’s Surname and Name.....

DECLARATION BY RESEARCHERS / STUDENTS:

Surname & Initials	Name	Tel	Cell	Email address	Signature

N.B. This form (and all other relevant documentation where available) may be completed and forwarded electronically to Gumani.mukatuni@gauteng.gov.za; Dineo.Mashigo@gauteng.gov.za and please copy (cc) ResearchInfo@gauteng.gov.za. The last 2 pages of this document must however have the original signatures of both the researcher and his/her supervisor or promoter. It

should be scanned and emailed, posted or hand delivered (in a sealed envelope) to Gumani Mukatuni, 7th Floor, 6 Hollard Building, Main and Simmonds Streets, Johannesburg. All enquiries pertaining to the status of research requests can be directed to Gumani Mukatuni on tel. no. 011 355 0775 or Dineo Mashigo on tel. no. 011 355 0336.

Appendix B: Teacher Semi-structured interview schedule



Semi-structured interview schedule for teachers:

Introduction:

(During the introduction of the interview, I as the researcher, will introduce myself to the teachers who will be interviewed. I will ask the teachers to tell me their names and an interesting fact about themselves. Thereafter, I will share something about myself to earn their trust. After the introductions, I will explain my study to them as well as the purpose and goal of the interview. I will explain each step of the interview process with them as well as the responsibilities and rights of a participant. They will be informed that their answers and participation will be kept confidential and that they have the right to withdraw anytime from the interview. As soon as all formalities are agreed on, the interview will commence).

Verbal Self-constructed Open-ended Questionnaire:

- Current grade/s taught:
- Number of years in the profession as a teacher:
- Number of learners with ASD thought.

Interview Schedule:

1. What do you understand under the terms of Autism Spectrum Disorder?
2. What is your perspective on the social inclusion of learners with ASD in a mainstream school setting?
3. Do you think that it is possible to socially include learners with ASD in social activities? Explain your answer.
4. What has your experience been teaching learners with ASD?
5. What challenges do you, as the teacher, experience daily when teaching learners with ASD?

6. What would you say is your biggest challenge when trying to socially include learners with ASD in your classroom?
7. Do you as the teacher receive any additional support from the school, principal or parents on how to socially include these learners in your classroom?
8. Which strategies do you currently use to socially include learners with ASD in your classroom?
9. How do you think can you further ensure the social inclusion of learners with ASD in your classroom?
10. What advice can you provide to future teachers when trying to socially include learners with ASD in mainstream classrooms?

Conclusion:

(After the interview, I will thank the teachers for their dedication and participation during my study. I will assure them once again that all information shared will be kept confidential and that my research study outcome will be shared with them. I will greet them and see myself out).

Appendix C: Self-constructed open-ended questionnaires for learners with ASD



Self-constructed open-ended questionnaire schedule for learners with ASD:

Introduction:

(During the introduction of the questionnaire process, I as the researcher, will introduce myself to the learners who will be questioned. I will ask the learners to tell me their names and something no one else knows about them. Thereafter, I will share something about myself to earn their trust. After introducing ourselves, I will ask the learner to draw a picture of themselves. This will give me a better understanding of how the learners view themselves. Thereafter, I will explain my study to them as well as the purpose and goal of the interviews, I will explain each step of the interview process with them as well as the responsibilities and rights of a participant. They will be informed that their answers and participation will be kept confidential and that they have the right to withdraw anytime from the interview process. As soon as all formalities are agreed on, the interview process will commence).

Verbal self-constructed open-ended Questionnaire:

- Age:
- Grade Level:

Questionnaire Schedule:

1. Do you enjoy being in this school? Explain
2. What do you like about the school?
3. Is there anything that you do not like at the school? Explain
4. What do you think can make school better for you?

5. How many friends do you have here at school?
6. Is it easy for you to make friends or not? Explain
7. How do you think your teacher can help you to make more friends?
8. Are you doing any fun activities at the school? Like sport, singing or dancing? If yes, explain.
9. Would you like to be part of more fun activities with your friends?
10. How do you think your teacher can help you to be part of more fun activities at the school?
11. What does your teacher help you with at school?
12. Is there anything else you would like your teacher to help you with at the school?

Conclusion:

After questioning the learners, I will personally thank them for participating in my study. I will thank them by giving them a reward. Thereafter, I will ask them to tell me what they think they have learnt about themselves during this time. We will conclude the interview by greeting each other.

Appendix D: Learner with ASD assent form



Learner Assent for participating in a Research Study

A research project of the University of Pretoria

Project Title: The social inclusion of learners with Autism Spectrum Disorder within primary mainstream schools in a South African context.

(To be read by parent/guardian to children under the age of 18 years)

Why am I here?

Sometimes when we want to find out something, we ask people to join something called a project. In this project I will want to ask you questions about yourself and how you feel during social activities such as playing with friends or working in a group. Before I ask you to be part of this study, I want to tell you about it first.

This study will give me a chance to see how I, together with your school and teachers, can help you address any social challenges that you may have here at school. I also want to help you gain new strategies that will help improve your social skills in your daily life interactions with other people after leaving school. I am asking you to be in this study because your parents/guardians have agreed that you can be part of my study.

What will happen to me?

If you want to be part of my study, and your parent/guardian grant you permission to do so, you will spend some time with me (no more than 20 minutes) answering some questions. This will be done as soon as you are ready and available to do so. The questions will be about you and your social experiences at school. There are no right or wrong answers, only what you feel is best.

If you agree, I would like to make voice recordings of you while you answer the questions. Only I and my supervisors will be using these voice recordings during discussions and writing of reports about this project. However, I will not tell anyone your name.

Will the project hurt?

No, the project will not hurt. The questions can take a long time, but you can take a break if you are feeling tired or if you don't want to answer all the questions at one time. If you don't want to answer a question, you don't need to.

Will the study help me?

I hope this study will help you understand that you are special and unique and that you can be part of anything if you put your mind to it. I hope that this study will also help to improve your social skills to make a lot of new friends and to be part of any social activities you want to be part of.

What if I have any questions?

You can ask any questions you have about the study. If you have questions later that you don't think of now you can have your parent/legal guardian phone me at 072 698 0190 or you can ask me when I come to visit you here at your school on the day of the research project.

Do my parents/guardians know about this project?

This study was explained to your parents/guardians, and they said you could be part of the study if you want to. You can talk this over with them before you decide if you want to be in the study or not.

Do I have to be in the project?

You do not have to be in this project. No one will be upset if you don't want to do this. If you don't want to be in the project, you must just tell me. You can say yes now and if you change your mind later you don't have to be part of the project anymore. It's up to you.

Kind regards,

Ms Linelle Alberts

E-mail address: u16310242@tuks.co.za

Supervisor: Dr Maria Ramaahlo (Maria.Ramaahlo@up.ac.za)

Co-Supervisor: Prof Ruth Mampane (Ruth.Mampane@up.ac.za)

Learner Assent

Writing your name below on this page means that you **agree to be in the project** and that you **know what will happen to you** in this study. If you decide to quit the project all you must do is tell the person in charge.

Signature of learner

Date

Writing your name below means that you agree that **I can take voice (audio) recordings** of what you say during the research project and share these recordings with my research supervisors during supervision, as well as reports I write about the research project. I will not share your name with the people who hear the recordings. If you decide that I should rather not take voice recordings of you in the project, all you must do is tell me.

Signature of learner

Date

If you have any further questions about this study, you can email the investigator, Linelle Alberts at u16310242@tuks.co.za. If you have a question about your rights as a participant, you can contact the University of Pretoria Faculty of Education Ethics Committee at 012 420 5656.

Appendix E: Parent consent form



Parent/Guardian consent for participation of a minor in a Research Study

A research project of the University of Pretoria

Project Title: The social inclusion of learners with Autism Spectrum Disorder within primary mainstream schools in a South African context

Dear Parent/Guardian

I am Linelle Alberts a master's student at the University of Pretoria. The title of my study towards my master's degree is "The social inclusion of learners with Autism Spectrum Disorder (ASD) within primary mainstream schools in a South African context." The aim of the study is to investigate the barriers and facilitators to social inclusion for learners with ASD within mainstream schools in Tshwane.

I am working under the supervision of Dr Maria Ramaahlo and Prof Ruth Mampane from the University of Pretoria.

My research study was approved by the GDE "2023/212" as well as by the Faculty of Education Ethics committee "EDU024/23".

I would like to invite your child to participate in this research study. In order to decide whether or not to participate in the research study you should know enough about the study and its risks and benefits to be able to make an informed decision. Once you understand what the study is about you can decide if you want your child to take part in the study. If so, you will be asked to sign this consent form, giving your child permission to be in the study.

Description of the research

The purpose of the study is to explore barriers and facilitators to the social inclusion of learners with ASD in mainstream schools in South Africa. This study will also provide your child with a platform to voice their daily challenges and strategies which may help them feel included within social activities. This study also aims to investigate further strategies that can support current and future teachers with including your child within social activities.

If you want your child to be part of my study, they will spend some time with me answering some questions. This will be done at their earliest convenience when they are available. The time spent with your child will take approximately 20 minutes. The interviews may be done virtually. Different virtual platforms may be used, that the learners are familiar with. The questions will be about your child and their social experience at school. There are no right or wrong answers, only what your child feels is best. Also, with your permission, I would like to make audio (voice) recordings of your child's verbal responses to the questions. The recording will be stored in a secure location (a locked cupboard or password protected computer) with restricted access to my supervisors and me. These audio recordings will be transcribed and any information that could identify your child will be removed. Direct quotes from the recording, without any information that could identify your child, may be cited in the research report or other write-ups of research.

Risks and Inconveniences

I do not see any risks for your child participating in this study. If any problems do arise, I will speak to the child and make sure he/she understands what is going on and feels comfortable to continue in the study. The identity of the child will not be revealed to anyone and any personal information that I get from the study will be kept private.

Confidentiality

All the information that I get from the study will be kept strictly confidential and will only be available to my supervisors. No information will be shared with anyone else. The only exception is if there is a serious problem about the safety of the child or any other person in which case, I am required to inform the appropriate agency. If such a concern arises, I will make every effort to discuss the matter with you before taking any action. Please note that none of the questions in this study are designed to collect information that will require me to contact anyone. All the information I get from the study will be

stored in locked files in research offices at the University of Pretoria. Because confidentiality is important, I would expect that any information you provide is also private and that you would not discuss this information with anyone.

Benefits

I hope that this study will benefit your child social experiences and that he/she will feel more included within social activities at school as well as in their daily life interactions. There are no financial benefits to this study.

What are the rights of the participants in this study?

Participation in this study is purely voluntary and both the parents/guardians as well as the child may refuse to take part in the study or stop at any time without giving any reason. If the child decides not to participate or wants to stop taking part in the study after they said yes, this will not affect you or the child in any way.

Has this study received ethical approval?

This study has been approved by the Health Sciences Ethics Committee of the University of Pretoria.

Questions

Please feel free to ask about anything you don't understand and take as long as you feel necessary before you decide about whether you want to give permission for your child to take part in the study. If you have questions later that you don't think of now you can email me at u16310242@tuks.co.za or you can ask me when I come to visit the school.

Kind regards,

Ms Linelle Alberts

E-mail address: u16310242@tuks.co.za

Supervisor: Dr Maria Ramaahlo (Maria.Ramaahlo@up.ac.za)

Co-Supervisor: Prof Ruth Mampane (Ruth.Mampane@up.ac.za)

Informed consent Form

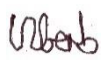
I hereby confirm that I have been informed about the nature, conduct, risks, and benefits of this study. I have also read or have had someone read to me the above information regarding this study and that I understand the information that has been given to me. I am aware that the results and information about this study will be processed anonymously. I may, at any stage, without prejudice, withdraw my consent for my child to participate in this study. I have had sufficient opportunity to ask questions and (of my own free will) declare that the child may participate in this study.

Name: _____

(Please print)

Signature: _____ Date _____

Researcher's name: Linelle Alberts

Researcher's signature:  Date: _____

If you have any further questions about this study, you can email the investigator, Linelle Alberts at. If you have a question about your rights as a participant, you can contact the University of Pretoria, Faculty of Education Ethics Committee at 012420 5656

Appendix F: Teacher consent form



TEACHER REQUEST FOR PARTICIPATION AND INFORMED CONSENT

Dear Teacher

I am Linelle Alberts a master's student at the University of Pretoria. The title of my study towards my master's degree is "The social inclusion of learners with Autism Spectrum Disorder within primary mainstream schools in a South African context." The aim of the study is to investigate the barriers and facilitators to social inclusion for learners with ASD within mainstream schools in Tshwane.

I am working under the supervision of Dr Maria Ramaahlo and Prof Ruth Mampane from the University of Pretoria.

My research study was approved by the GDE "2023/212" as well as by the Faculty of Education Ethics committee "EDU024/23".

For the research to be conducted, you will be requested to partake in interviews as part of the data collection instruments. The interviews will be scheduled, at your earliest convenience, when you are available. The interview should take approximately 45 minutes. The interviews and observations may be done virtually. Different virtual platforms may be used, that you are familiar with. This will be discussed with you prior to the virtual meeting. You are required to provide a written consent that will include your full name and initials, signature, and date to verify that you understand and agree to the conditions.

Your participation in this study is voluntary and confidential. You have the right to withdraw at any point during the research study without any consequences or explanations. You can be assured that your decision will be respected. Confidentiality

and anonymity will be guaranteed always by using pseudonyms to the participants during the transcription phase. No participant names or personal information will be reported in my findings. We will provide you with the necessary information to assist you to understand the study and explain what would be expected. Please feel free to ask the researcher to clarify anything that is not clear to you.

In participating in this research study, you will be asked for permission by the researcher to make audio recordings of the semi-structured interview. The purpose thereof is to make transcription of data valid and authentic. The recording will be safely kept at the University of Pretoria. Only my supervisors and I will have access to the audio recordings. All data collected will only be used for academic purposes.

You may ask questions before or during the time of participation. If you have any concerns regarding the data collection procedures, please notify me or my supervisor. As a participant, you will have the opportunity to access and verify the recorded views and the transcriptions of interviews made in case there is a need to do so.

Please indicate by signing your understanding of information shared above, the purpose being to give your consent to participate.

We also would like to request your permission to use your data, confidentially and anonymously, for further research purposes, as the data sets are the intellectual property of the University of Pretoria. Further research may include secondary data analysis and using the data for teaching purposes. The confidentiality and privacy applicable to this study will be binding on future research studies.

Kind regards,

Ms Linelle Alberts

E-mail address: u16310242@tuks.co.za

Supervisor: Dr Maria Ramaahlo (Maria.Ramaahlo@up.ac.za)

Co-Supervisor: Prof Ruth Mampane (Ruth.Mampane@up.ac.za)

Informed consent Form


I hereby confirm that I have been informed about the nature, conduct, risks, and benefits of this study. I have also read or have had someone read to me the above

information regarding this study and that I understand the information that has been given to me. I am aware that the results and information about this study will be processed anonymously. I may, at any stage, without prejudice, withdraw my participation in this study. I have had sufficient opportunity to ask questions and (of my own free will) declare that the child may participate in this study.

Name: _____

Date _____

Researcher's name: Linelle Alberts

Researcher's signature:  Date: _____ -