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Literacy learning strategies implemented by teachers to support literacy development for learners with complex communication needs in underserved schools in KwaZulu-Natal

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SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Literacy learning strategies implemented by teachers to support literacy development for learners with complex communication needs in underserved schools in KwaZulu-Natal.

A dissertation presented to the department of Speech Pathology and Audiology

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Supervised by Dr Anniah Mupawose

DECLARATION

I hereby declare that this research is entirely my own work, and all primary and secondary sources have been appropriately acknowledged. The assistance obtained was only in the form of professional guidance and supervision. The dissertation has not been submitted to any other institution as part of an academic qualification. This dissertation is prepared in fulfilment of the requirements of the degree of Master of Arts in speech language pathology at the University of the Witwatersrand.

06 October 2024

Full Name: Makgetjepe Dineo Makgetloa Signature: 

Acknowledgements

This research is dedicated to learners with complex communication needs in especially low-income schools where there are limited resources.

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Abbreviation list

CCN- Complex Communication Needs

KZN- KwaZulu -Natal

AAC- Augmentative and Alternative Communication

LSEN- Learners with Special Educational Needs

NDP- National Development Plan

SLT- Speech Language Therapist

UNESCO- United Nations Educational Scientific & Cultural Organisation

DoE- Department of Education

DBE- Department of Basic Education

UN- United Nations

CRPD- Committee on The Rights of Persons with Disabilities

PIRLS-Progress in International Reading Literacy Study

SES- Socio Economic Status

APA- American Psychological Association

NELP-National Early Literacy Panel

ASHA- American Speech & Hearing Association

HPCSA- Health Professional Council of South Africa

SACE- South African Council for Educators

SSIS- Semi Structured Interview Schedule

PIS- Participant Information Sheet

PA- Phonological Awareness

LLE- Language Learning Environment

LLO- Language Learning Opportunities

LLI- Language Learning Interaction

Abstract

Background: Children with Complex Communication Needs (CCN)' literacy acquisition is often overlooked and they are often not taught the necessary skills required to learn literacy skills (Manoharan et al., 2022). Successful literacy attainment for these learners is dependent on the skills of the teacher to provide a communicatively successful environment to facilitate literacy learning.

Objective: The aim of this study was to investigate the literacy learning strategies implemented by teachers to support literacy development for learners with complex communication needs who are non-speaking in underserved schools.

Method: The study utilised was predominantly quantitative with a minor aspect being qualitative. Non-probability purposive sampling techniques was used to recruit eight teachers in the foundation phase (3) and intermediate phase (5). The data was collected using a semi structured interview schedule (SSIS) and a classroom observation checklist. The closed-ended questions from the semi structured interview and classroom observation checklist were analysed using descriptive statistics and open-ended questions from the interview were analysed using inductive thematic analysis.

Results: The results of this study quantitatively and qualitatively from the SSIS revealed a lack of resources for all learners with CCN, lack of teacher training and support from speech language therapists (SLT). Moreover, teachers appeared to express limited in knowledge pertaining to literacy facilitation and an understanding of Augmentative and Alternative Communication (AAC) for learners with CCN. The checklist findings revealed limited teacher-learner interactions, and opportunities for learners with CCN to communicate. Additionally, the classrooms were not set up to facilitate language and literacy learning for learners.

Conclusion: The findings of this study highlighted that special needs schools in rural areas tend to be underserved by SLTs and are under-resourced. This study further highlighted the need for collaboration between speech language therapists and teachers to support communication and literacy development of learners with complex communication needs who are non-speaking. Additionally, the need for ongoing teacher training in relation to AAC and literacy implementation for learners with CCN. The training needs to be aimed at aiding

teachers in understanding of CCN and how to create a more inclusive classroom environment to enhance communication and literacy opportunities for such learners.

CHAPTER 1: INTRODUCTION

1.1. Study introduction

Socio-economic status inequality in South Africa is a major problem and it has become a challenge in the educational system (National Development Plan 2030). The majority of South Africans have experienced disadvantages in a variety of contexts because of the apartheid era, including access to quality education, thus affecting literacy development (Moonsamy, Mupawose, Seedat & Mophosho, 2017). The past inequalities such as the policy of segregation; the discrepancy in the provision of education, learning resources, and range of habilitation and rehabilitation between white South Africans and black South Africans, has led to and left many schools in the country with a lack of access to the necessary resources needed for the development of language and literacy learning (Graven, 2013). Additionally, such inequalities leave many South African children at risk for expressive language difficulties. Spoken language or Oral language is the foundation for literacy development; hence the inequalities leave the learners at risk for literacy, speech and language developmental delays, which affect their educational progress and therefore put them at risk for academic performance (Fernald, Marchman & Wiesleder, 2013).

The inequality in the provision of quality education and adequate support has been most evident in the special needs sector. It has been reported by the Human Rights Commission that learners with special needs in rural areas experience educational exclusion. There are a few schools in the rural areas and there are no special schools in the deep rural areas (Human Rights Commission, 2018). Additionally, where such schools exist, they do not always have qualified professionals and specialized personnel (Department of Basic Education, 2014). Therefore, learners with speech and language problems resulting from developmental disabilities are severely restricted in educational, vocational, and community environment participation (Light & McNaughton, 2014).

Additionally, it has been revealed that children with developmental disabilities who have limited, or no speech are restricted to participate in the same ways as their typically developing peers (Light & McNaughton, 2014). Literacy is closely related to speech and language development. Oral language competency forms the foundations for successful literacy achievement and therefore, problems with language development will result in a risk

for literacy attainment (Chambers, Stronach & Wetherby, 2016). The research findings from (Giacovazzi et al., 2021) and (Barton-Hulsey & Phinney, 2021) revealed that the utilization of Augmentative and Alternative Communication (AAC) devices can be used to help promote and support language and literacy development in children with communication difficulties. AAC intervention allows provision of multimodal input opportunity from communication partners during classroom activities of language learning and literacy as well as providing the learner with means of expressive communication (Barton-Hulsey et al., 2021). However, the implementation of AAC has been challenging in South Africa, thus the support methods that are currently in place have limited impact (Kulkarni & Parmar, 2017; Soto & Yu, 2014; Genesee et al., 2016).

The academic performance of learners is the result of learning prompted by the teacher through teaching activity and therefore produced by the learner. Moreover, literacy influences academic performance, which is dependent on the foundation of language competence (Wium, 2015). To become globally competitive in literacy attainment, it is of the utmost importance to increase learner performance. Raising educational standards, literacy, and continued professional development and support, have become national priorities in basic education (Wium, 2015).

Therefore, this study aimed to investigate the literacy learning strategies implemented by teachers that support the literacy of children with complex communication needs who are non-speaking in KwaZulu-Natal in an underserved educational context between the ages of 5 and 15 years in the foundation phase and intermediate phase. This research study recruited one Learners with Special Educational Needs(LSEN) school in the rural area of KwaZulu-Natal. This research was undergirded by Vygotsky's socio-cultural theory. This theory was selected as it emphasizes the importance of the environment the child interacts with, the more knowledgeable partner and zone of proximal development.

1.2. Purpose and Study significance

The purpose of this study was to investigate how teachers facilitate literacy learning strategies to support literacy development of learners who are non-speaking in their classrooms. South Africa's transition to a democratic country from the colonial policy of apartheid has been a success in building democratic institutions, transforming public services, and stabilising our

economy, however, many people continue to live in poverty and the society remains highly unequal (National Development Plan [NPD] 2030). The quality of education remains poor and only a minority of people are working. To eradicate these issues, NDP 2030 was initiated. It is the country's plan to eliminate poverty and reduce inequalities by the year 2030 and allowing an inclusive economy and building capabilities amongst other things. Continued development of teachers, learner support materials and equipment, and various stakeholders' support have been identified as challenges faced in the basic education centre (NDP 2030). Therefore, the significance of this study was to contribute to the nation's development plan in terms of raising awareness to promote the quality of education of learners with Complex Communication Needs. Furthermore, to highlight if there is need to provide continued professional learning opportunities for teachers in LSEN schools. Furthermore, the scope of practice for Speech-language therapists (SLT) has expanded from the traditional pull-out method and addressing communication difficulties in isolation. SLTs are now required to provide language and literacy support to all learners in the classrooms and to support the teachers in supporting the learners with communication difficulties (Wium, 2013). Therefore, the study further aimed to increase speech language therapy support to the teachers in implementing Augmentative and Alternative Communication in the classrooms to facilitate communication, language, and literacy development with learners who are non-speaking.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Literacy incorporates various skills such as reading, spelling, and writing (Wium, 2015). It is the ability to identify, interpret, understand printed and written material associated in a variety of contexts. Literacy is a continuous cycle that involves achievement of goals and allows individuals to develop knowledge and reach their potential as well as to fully participate in the community and society they reside in (United Nations Educational, Scientific & Cultural Organisation [UNESCO], 2017). It can be viewed as a social practice that is influenced by an individual, their home culture as well as their school environment (McKenzie, 2015). To investigate the literacy abilities of children with complex communication needs in underserved educational contexts, the relationship between communication, language, and literacy needs to be explored. Moreover, it is important to understand the impact of socio-economic status in the context of education and how it influences children's development.

2.2. Background

The history of South Africa is deeply rooted in the apartheid era. Apartheid was governed by colonial rule and a policy of segregation, violation of human rights, and the violation of the dignity of the majority black South African population (Constitution of South Africa, 1996). Most South Africans experienced disadvantages in various contexts due to the apartheid era, including access to quality education, thus affecting literacy development (Moonsamy et al., 2017).

The effects of apartheid remained most evident in the special needs sector. The segregation of learners based on race was extended to incorporate the segregation of learners based on disability. Therefore, the apartheid special schools were organized based on two segregating criteria: race and disability (McKeever, 2017). The schools that accommodated the minority white disabled learners were extremely well resourced whilst the schools that accommodated black disabled learners were under-resourced. Additionally, the white children were provided with a range of therapies to meet each pupil's need, however, the black children, including coloureds and Indians only relied on their teachers to take on the responsibility which they were not adequately trained (Ratshitanga, 2007). In addition to the racially segregated

educational system, there were two evident separate education systems for special and mainstream education, which were characterized by racial disparity (Naicker, 2000).

The apartheid system created educational inequalities amongst the black and the white South Africans (Ocampo, 2004). As a result, the Bantu Education Act of 1952 was put in place which ensured that Black people received limited education which was reduced to needleworkk, handcraft, planting, and soil conservation (Bantu Education Act, 1953). Furthermore, inequalities were evident in funding of the education system. The Bantu Education created different Departments of Education by race and therefore allocated less money to the black schools. The lack of funding was a factor in the provision of quality of learning materials, facilities, and environments (Ocampo, 2004). This led to distinct access to higher education. Additionally, there was no financial assistance for black people to attend higher education. As a result, there was a shortage of qualified teachers. Furthermore, 96% of teachers in the white schools had teaching certificates whilst only 15 % of teachers in black schools had teaching certificates (Garson, 2013). Therefore, the professional training of teachers was affected by this inequitable educational system.

2.3. Education of children with disabilities in SA

The rights of people with disabilities are protected under myriad international instruments and national legislation and policies. According to the United Nations, Universal Declaration of Human Rights, article 26, everyone has the right to access education, primary education should be made compulsory, and education should be free, at least at the elementary and fundamental stages (United Nations, 2015). The right to education is a fundamental human right, which, according to the South African Centre for Equal Education Law, ensures the full personal development of each learner and the moral, social, cultural, political, and economic development of the nation (Human Rights Commission, 2016). It further contributes to promoting democracy, human rights, and the peaceful resolution of conflicts. Even though the South African government has not yet published an accurate number, an estimation of 600 000 children with disabilities remains to be out of school in the country (Human Rights Commission, 2016). Therefore, the rights of children with disabilities are violated.

To overcome thee educational exclusion challenge, inclusive education was implemented globally. According to the United Nations (UN), Sustainable Development Goal 4 is to ensure

inclusive and equal quality education and to promote ultimate learning opportunities for all by the year 2030 (UN, 2015). Furthermore, the Committee on the Rights of Persons with Disabilities (CRPD) upholds inclusive education to be a basic human right for all (UN CRPD 2016, section 10a). Inclusive education entails the recognition that all children should learn together in an environment that supports their abilities, capabilities, differences, learning, respond to individual needs. It further recognises that every learner should be accommodated and have access to education in the general (mainstream) educational system regardless of their differences or disabilities (UN, 2015).

In South Africa, following an international trend of inclusive education, the Department of Basic Education (DBE) has introduced inclusivity which was intended in guiding the planning, organisation, and teaching at all schools in the country (DBE, 2010b; Department of Education [DoE], 2002). South Africa adopted the international philosophy of inclusivity to ensure the provision of quality education, and that education is provided equally to all learners and to further ensure that the diverse needs of learners are supported and accommodated for (Swart & Pettipher, 2016). Inclusive education was introduced in the year 2001 in South Africa. The Department of Education issued a framework policy document called "The White Paper 6: Special Needs Education, Building an Inclusive Education and Training System". White Paper 6 is a document issued by the Department of Education in response to the post-apartheid state of special needs education and support services within education and training (DoE, 2001). The findings were that only a small percentage of learners with disabilities received education and support, which was based on race.

Moreover, the education system had failed to provide adequate services to the diverse needs of learners, meaning some learners with disabilities were mainstreamed and put in ordinary schools by default or were out of school entirely and did not receive any form of education (DoE, 2001). As a result, the aim of this policy was to attempt to address the unique and diverse needs of all learners with barriers to learning. Its main concept was based on the fact that all children have the potential to learn when given the adequate and necessary support. The scope of this policy is to address the diverse needs of all learners with barriers to learning. Additionally, the system's inability to identify and accommodate their diverse learning needs contributes to barriers to learning (DoE, 2001).

South Africa is bound by Article 24 of the Convention on the Rights of Persons with Disabilities to ensure that people with disabilities are included in the educational system and should access an inclusive, quality, and free education in primary and secondary school on an equal basis with everyone in the communities they reside in. However, despite the many legislations and policies available to include people with disabilities, children with disabilities still face challenges in accessing education. In addition to the barriers that impact access to schools, the learners that attend school face additional challenges, such as a lack of adequate services within the schools, lack of access to appropriate transport, lack of adequate resources, and abuse from other learners and teachers.

Despite all these laws and policies, the educational exclusion is pervasive (UNESCO, 2020). The challenge in implementing inclusive education internationally remains and identified such as negative attitudes towards inclusion, prejudice and discrimination, the government will and financial provision, poor quality teacher education, inaccessible curriculum and schools, lack of adequate research to monitor progress, inadequate clear laws, and policies (Braun, 2020; Genova, 2015; Sharma, 2020; UN, 2016; UNESCO, 2020)

Nevertheless, it is evident that equity has been prioritized in the South African education policy. However, the execution of inclusive education has been challenging in South Africa (Engelbrecht et al., 2013). Teachers continue to struggle to implement inclusive education despite mandates to maintain quality teaching practices (Nel et al., 2016). Close to 65 percent of mainstream teachers do not have a formal first-teacher education degree, which includes teaching how to react to a wide range of learning needs in normal classrooms (Engelbrecht et al., 2013)

South Africa's literacy achievement performance in Progress in International Reading Literacy Study (PIRLS) has placed the country below the international benchmark (Mullis et al., 2017). Furthermore, the recent score in PIRLS dropped. This infers that South Africa is not progressing in literacy development as expected. It has been reported that 81 % of grade four learners could not read for meaning (Mullis et al., 2023). Therefore, to address the literacy delays in South Africa, it is of utmost importance to increase learner performance since raising educational standards as well as continued professional development of teachers and support has become a national priority (Wium, 2015).

There are three types of schools in South Africa that accommodate learners with special needs. A mainstream school is an ordinary school that all learners attend. The mainstream schools are mandated by the Screening, Identification, Assessment, and Support (SIAS) policy to accommodate children with disabilities practically and rationally in the neighbourhood they reside in (Veriava, Thom & Hodgson, 2017). Full-service schools are converted mainstream schools that have been specially designed and resourced by the government to accommodate learners with disabilities and with low or moderate learning needs. Learners with special needs schools (LSEN) are schools that are specially designed to deliver specialized education for learners requiring high educational support. LSEN schools should accommodate learners who generally cannot attend a full-service school (Veriava, Thom & Hodgson, 2017).

The challenges faced by South African inclusive education schools include disproportionate learner-teacher ratio, overcrowded classrooms, lack of support from the Department of Education, employment of under-qualified teachers, lack of supervision by school management teams, inflexible curriculum, lack of parental involvement, and lack of teaching and learning materials (Chisango & Lepheana, 2022).

The disproportionate learner-teacher ratio and overcrowded classrooms leads to poor classroom management. Classroom management refers to skills and techniques implemented by teachers to keep the classroom organized, attentive and academically productive (Babadjanova, 2020). It involves activity planning, supervision and coordination of objectives and safeguarding the learners' well-being. Poor classroom management leads to poor academic success and production. Classroom management helps teachers create better learning and teaching process which makes classroom lessons systematic and influential for their learners (Babadjanova, 2020).

2.4. The relationship between communication, language, and literacy

Communication, language, and literacy abilities are fundamental to participation in all areas of family, school, work, and community life (Beukelman & Mirenda, 2013). Communication is an act consisting of verbal, non-verbal, and electronic means of interaction to convey and transmit information. It is the meaningful exchange existing for the purpose of creating and sharing a common understanding (Velentzas & Broni, 2014). The development of language and communication is a complex process that begins in the early years of life. Social

communication skills should be more evident in the sharing of emotions, the presence of eye gaze, the rate of communication, communicating for a variety of functions, and understanding language (Chambers, Stronach & Wetherby, 2016). A delay in social communication skills may be an indicator of developmental delays/or impairments and result in complex communication needs.

Complex Communication Needs is a broad term referring to individuals with severe impairments in speech, language, and communication. It includes those with abilities to speak but has comprehension and expressing needs and wants difficulties, moreover, those who are non-speaking, have sensory and physical needs that impact their ability to form and engage in communication (Communication Rights Australia, 2018). For this research, the term CCN will refer to the learners who are non-speaking and may or may not be using Augmentative and Alternative Communication (AAC).

Language, literacy, and communication coexist. A child's early oral language skills are positively correlated with later academic performance (Bleses et al., 2016; Law et al., 2017). The reason for the correlation is that reading comprehension and decoding stem from oral language competency in various aspects such as vocabulary, phonology, syntax, figurative language, and storytelling. Furthermore, language development is the basis of communication skills and supports the emergence of linguistic and cognitive development (Chambers, Stronach & Wetherby, 2016). Moreover, literacy skills encourage learners' engagement with texts and the generation of their own writing, which formal academic assessment depends on. In addition, linguistic skills allow a learner to benefit from instruction from the teacher directly, which usually is delivered utilizing linguistic means of communication (Jenny et al., 2021)

Communication, language, and literacy skills attainment allows richer participation in educational setting. It also allows access to employment opportunities and encourages access and the use of different range of technologies. However, some children with various developmental disabilities resulting from Autism Spectrum Disorder, Down Syndrome, and Cerebral Palsy to name a few, do not have the same opportunities to develop these skills typically as expected due to impairments in speech, language, and motor, or sensory-perceptual (Beukelman & Mirenda, 2013).

The impact of low literacy levels affects the access needs of people with CCN and further affect their quality of life and future employment. A study done by (Mitra, Posarac and Vick, 2013) indicated that people with disabilities present with a low level of education, limited participation in the workplace, and lived in poverty. These results are comparable to previous studies that have reported a relationship between disability and poverty (Banks, Kuper & Polack, 2017). In contrast, employment is considered a mode of societal participation and extends beyond the sustainability of the economy because it facilitates inclusion and participation in day-to-day activities (Hästbacka, Nygård & Nyqvist, 2016). Therefore, the exclusion of persons with disabilities in the economic environment and unemployment becomes a violation of their human rights.

Without proper literacy instruction, children with CCN only rely on communication partners to select and provide vocabulary and symbols for their communication which limits their participation in a variety of contexts (Manoharan et al., 2022). However, literacy acquisition allows for a variety of communication options and children with CCN can independently produce and share any message to any individual. As a consequence, learning to read and write provide communication, language development, and independence benefits to individuals with CCN**,** in addition to significant academic, professional, social, and personal benefits (Manoharan et al., 2022).

2.5. Literacy and socio-economic status

Socio-Economic Status (SES) is reflected in a family's social and economic status and can also be measured by the same principles. There is a stable correlation between SES and the academic achievement and cognitive development of children (Chen et al., 2018). Socio-economic status incorporates income, educational achievement, secure financials, and perceptions of social status and class. It is not limited to the quality of life but also opportunities and benefits afforded to the people in society. Additionally, SES can be attributed to being a reliable and consistent predictor of various outcomes throughout life.

Some research has shown that home environment factors play a more important role than school, as they can explain most of the differences in students' school performance (Berkowitz et al., 2017; Lawson & Farah, 2017). Furthermore, International research has well-established that socio-economic status influences child development (Fernald et al., 2013).

Research shows that children from low SES develop and achieve academic skills at a slower rate than those from higher SES groups (Sosu & Schmidt, 2022). Children from low SES consequently present with poor cognitive development, language, and poor income and health in adulthood (American Psychological Association [APA], 2017). Low SES affects language development negatively because of certain aspects attributed to the living conditions and therefore provide unfit environment necessary for learning and acquiring learning and literacy skills. Such aspects include low impacts and stimulation from caregivers, poor physical and emotional conditions, and lack of necessary resources (McGillion, 2017; Lecheile, 2020; APA, 2021).

Therefore, children from lower socioeconomic and underserved communities are academically and socially disadvantaged compared to children from middle to upper socioeconomic communities (Walton, Bekker & Thompson, 2015). Despite the significant progress in South Africa, the aftermath of apartheid is still evident, and there are still some noticeably limited opportunities, evident poverty, and inequalities between different races (NDP 2030). The persistent inequalities in South Africa adversely affect language and literacy unless explicit joint interventions such as stakeholder collaboration are applied to break the cycle (Graven, 2013). The term underserved refers to schools or communities that are predominantly not provided with the same services and resources that are available in the middle and upper communities (Giacovazzi, Moonsamy & Mophosho, 2021).

2.6. Literacy development of children with CCN

Literacy is the groundwork for all aspects of adult life. Being a literate society, having the ability to read and write is highly valued which helps to improve one's quality of life (Manoharan et al., 2022). Nevertheless, for individuals with complex communication needs' literacy acquisition is often overlooked (Manoharan et al., 2022). Historically, students with developmental disabilities were not taught literacy acquisition (Browder et al., 2009). Reading was often overlooked and if it was implemented, it typically focused on sight words that are faced daily (Browder et al., 2009). It was believed that children with CCN cannot learn literacy skills, specifically reading comprehension and decoding as these two are strongly correlated with oral language competency (Chambers, Stronach & Wetherby, 2016). However, without

literacy, individuals with CCN often rely on communication partners to provide appropriate vocabulary and/or symbols to communicate.

The National Early Literacy Panel (NELP) was created in the United States in 2002 to produce scientific evidence on the development of early literacy skills. The NELP identified six predictors for reading and school success, namely, Alphabet knowledge, Phonological Awareness, Rapid automatic naming of letters and numbers and objects or colours, writing, and phonological memory (NELP, 2018). The meta-analysis of correlational studies showed that emergent literacy was predictive of later literacy performance (Terrel & Watson, 2018). Literacy levels are predictors of employment opportunities and therefore place an illiterate person at a further economic advantage (World Literacy Foundation, 2018).

The acquisition of literacy skills fosters cognitive development and enhances learning; allows full participation in education, increases chances of future employment opportunities, and fosters personal expression (Beukelman & Mirenda, 2013). Literacy acquisition reduces opportunity barriers imposed by other people and facilitates the inclusion of individuals with communication difficulties in education, vocational settings, and in their community (Beukelman & Mirenda, 2013). Therefore, for learners with complex communication needs, opportunities for learning means the provision of a communicatively accessible environment where every learner is presumed capable of learning and growing (Sen, 2021). Thus, it is important for teachers to facilitate literacy development for learners with CCN. Teachers are the driving force of the classroom, and the learners are dependent on the skills of the teacher to adequately facilitate literacy in a functional manner.

Research suggests that these children can gain literacy skills, and develop effective communication, language, and literacy, with appropriate support of Augmentative and Alternative Communication (Beukelman & Mirenda, 2013). Augmentative and Alternative Communication (AAC) is defined as an area of research that encompasses techniques, symbols, strategies and aids that a person with complex communication needs whose speech is limited to meet all their communication needs can use (American Speech-Language-Hearing Association [ASHA], 2018). AAC includes unaided symbols using a person's own body such as gestures, manual signs, and eye blink codes) and aided systems (additional resources such as speech-generating devices and communication boards). AAC intervention, therefore,

provides the individual with an opportunity for multimodal input and gives a means of expressive communication (ASHA, 2018).

A study conducted by (Manoharan et al., 2022), described an ongoing therapy for a 5.7-year-old with multiple disabilities using AAC. The study included teaching the alphabet recognition and letter-sound correspondence. The emergent literacy instruction for improving alphabet recognition and letter-sound correspondence was implemented using the 4 blocks of working with words and shared book reading over eight months. Over a period of eight months, improvement was noted in alphabet recognition and letter-sound correspondence. Therefore, it was concluded that Emergent literacy using the 4 blocks of the literacy model in addition to AAC was effective in gaining alphabet principles and phonics skills.

The provision of appropriate assistive technology, specifically AAC has been mandated by South African education policy documents for learners with disabilities (Doe, 2007; 2010). Various education departments purchased AAC devices during the years 2012-2014, however, procedures for procurement, maintenance, monitoring, and teacher training were not implemented (DoE, 2014). The lack of implementation of AAC devices for children with CCN impacts their ability to fully access literacy instruction.

AAC assessments and implementations are provided by Speech Language Therapists (SLTs). An SLT is a professional who works to prevent, assess, diagnose, and provide intervention for speech, language, social communication, and cognitive communication (ASHA, 2018). The role of SLTs in education includes prevention, assessment, intervention, and program design (ASHA, 2010; Health Professional Council of South Africa [HPCSA], 2017). Speech Language Therapists should contribute to the prevention of academic failure by following an evidence-based approach and supporting all learners in literacy development. Prevention of failure includes collaboration with teachers and making them aware of the role of language in learning (ASHA, 2010). They also need to assess and provide intervention to language and communication impairments as well as support teachers in designing and adapting teaching material to accommodate and include all learners (ASHA, 2010).

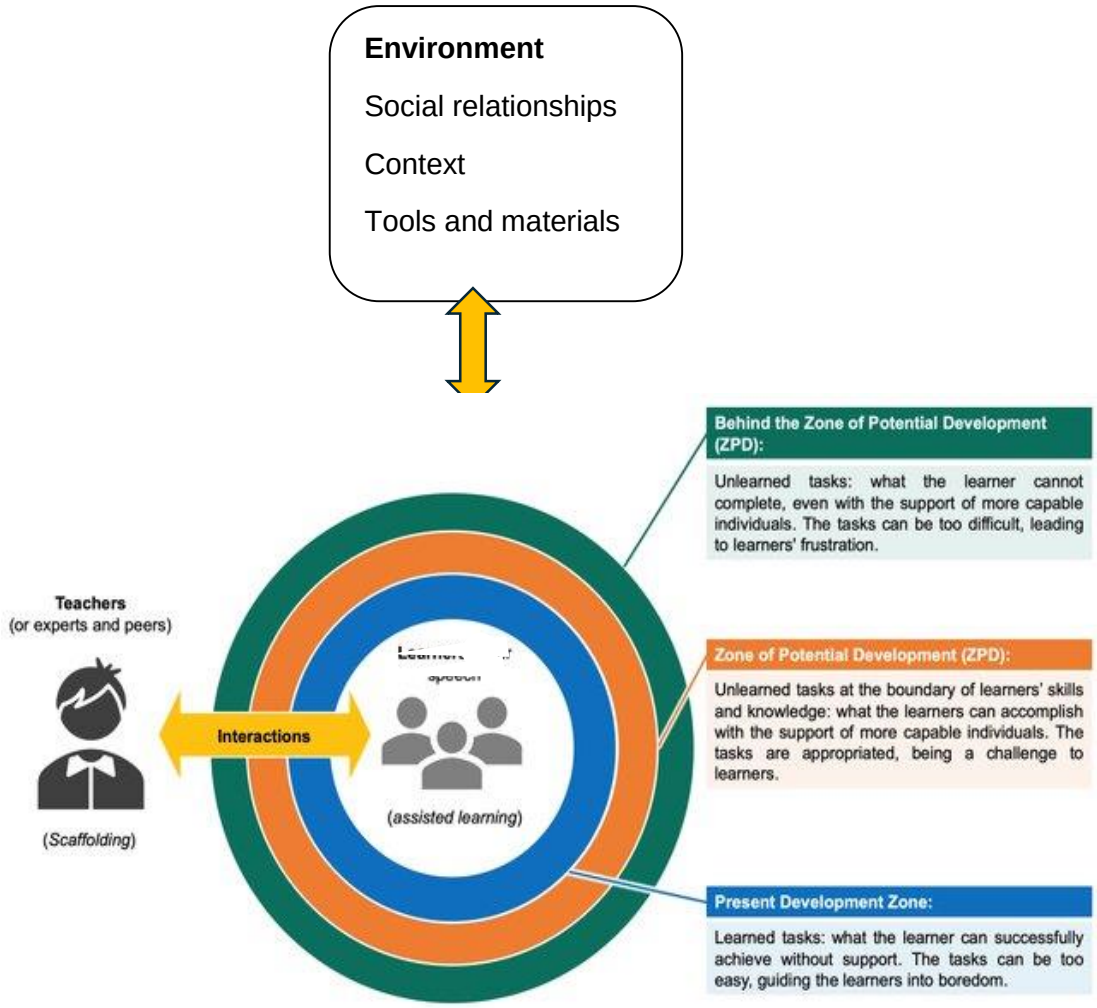
2.7. Theoretical framework

This study was undergirded by Vygotsky's socio-cultural theory. The theory was selected as it emphasizes the importance of social interaction and the role the environment plays in the

thought-shaping process. The emphasis Vygotsky placed on cultural and social interactions is important for the multicultural South African context (Wieten & Hassim, 2016). This theory advocates the active role a child plays in his cognitive development and further, the impact of his interactions with his environment and communication partners which are parents, teachers, and other children who can provide invaluable guidance (Wieten & Hassim, 2016).

The social-cultural theory focuses on three aspects: Social interaction, the zone of proximal development, and the more knowledgeable the partner (Keenan & Evans, 2009). Language skills cannot be separated from the social environment since language contains different meanings in a variety of different contexts (Etikan, 2014). Language is understood and created by environmental interactions. This is important for learners in this context to be familiarized with the use of language used in an authentic interaction. Therefore, the interaction between the learner and teacher can either serve as a barrier or an anchor in the development of language, which in turn is closely related to literacy development and vice versa.

The zone of proximal development describes the distance between what the child can do independently and what they can do with a more competent adult or peer (Levey, 2014). Teachers play an important role in the literacy development of children with complex communication needs within the school environment. The more equipped and knowledgeable the teacher, the better the chances of academic performance of children with complex communication needs.



2.8. Rationale of the study

Progress in International Reading Study (PIRLS) collects data to provide insight into the reading achievements in the fourth, fifth and sixth grades across the globe (Mullis et al., 2023). South Africa's literacy achievement performance in PIRLS has placed the country below the international benchmark (Mullis et al., 2023). These results imply South Africa is not progressing at the rate that is expected in its reading achievement. The factors identified to aid in increasing achievement include, attending well-resourced schools, early start to literacy instruction, increased teacher education, and attending schools regularly without being hungry (Mullis et al., 2017). Additionally, time devoted to reading in schools, class organization and learner-teacher interaction, reading methods, home language and language of learning and teaching (Mophosho et al., 2019)

Additional to the existing challenges, for individuals with Complex Communication Needs' literacy instruction is overlooked (Manoharan et al., 2022). Furthermore, the children from low socio-economic and underserved communities are placed at a disadvantage, both academically and socially compared to the communities from middle and upper classes (Walton et al., 2015). Such inequalities leave the learners at risk for the development of literacy, speech, and language, which affect their educational progress and therefore put them at risk for academic achievement (Fernald et al., 2013).

Therefore, this study aimed to address factors contributing to literacy delays in South African learners with Complex Communication Needs in underserved communities, to contribute to the nation's development plan in terms of raising the quality of education of learners with complex Communication Needs and providing professional learning opportunities for teachers.

This study set out to answer the following question: what literacy strategies teachers are employing to facilitate literacy development of learners with complex communication needs who are nonspeaking?

CHAPTER 3: METHODOLOGY

The following section aims to describe the methodology that was used to achieve the aims of this study.

3.1. Main aim

The main aim of this study was to investigate the literacy learning strategies implemented by teachers to support literacy development for learners with complex communication needs who are non-speaking in underserved schools.

3.2. Objectives

1. To describe teachers' implementation of literacy learning strategies in the classroom with children with complex communication needs.
2. To investigate teachers' interaction with learners with Complex Communication Needs.
3. To describe the teachers' awareness of the role of Speech Language Therapist support in the underserved schools.

3.3. Research Design

This study employed predominantly a quantitative research method with aspects of qualitative methods to enrich the data collection process and to provide more insight. Quantitative research is a method that implies collecting numerical data that can be distinguished into various categories (Pathak, Jena & Kalra, 2013) to establish trends. The quantitative aspect of this design included a semi structured interview schedule with closed ended questions. Additionally, a checklist consisting of closed-ended questions was used to observe the interaction between the participants and their learners to further enrich and substantiate the results obtained from the interviews. With regards to the qualitative aspect of this research, non-numerical data through open-ended questions from the semi structured interview schedule was utilized with the participants to understand the literacy learning strategies and possible barriers to implementing those strategies to learners with complex communication needs (Pathak, Jena & Kalra, 2013).

3.4. Participants Description

Non-probability purposive sampling was used in this research study. Non-probability purposive sampling is based on the conscious judgment of the researcher regarding the characteristics defined for the purpose of the study and the relation of the subjects to the phenomena being studied (Etikan & Bala, 2017). This sampling method was chosen based on the specific complex communication needs characteristics required for the study and the context of the school which included underserved educational context.

3.5. Participants

The participants included teachers in the foundation and intermediate phase from Khalipha, Learners with Special Educational Needs school from KwaZulu-Natal in the Pinetown district. A total of 8 participants participated in the study (N=8). All eight participants were females. The demographic information is presented in the able below.

Table 1: Demographic information

Participant	Years of teaching experience	Years of teaching experience In LSEN	Qualification	Gender	Teaching council	Learners In class	Non - speaking learners in class
1	5	5	Degree	Female	SACE	12	4
2	8	8	Diploma	Female	SACE	6	2
3	20	10	Diploma	Female	SACE	15	2
4	4	4	Post graduate certificate in education	Female	SACE	13	1
5	10	5	Diploma	Female	SACE	15	5
6	4	4	Degree	Female	SACE	19	5
7	8	4	Diploma	Female	SACE	15	8
8	2	1	Degree	Female	SACE	17	2

All the participants had as least two years teaching experience in formal education. Seven participants had at least four years teaching experience in LSEN school, with only one participant with one year teaching experience in LSEN school. Furthermore, all the

participants had at least 1 learner with CCN who were non-speaking in their classroom. In terms of teaching qualification, four participants had degrees in teaching qualification and the other four participants had diplomas in teaching. All the participants were registered with the South African Council for Educators.

3.6. Participant Inclusion and exclusion

The teacher participants' inclusion and exclusion criteria pertain to the semi structured interview schedule and classroom observation research activities.

Table 2: Participants inclusion and exclusion criteria

	Participants inclusion	**Participants exclusion**
Participants	1. Teachers registered with SACE with at least 2 years of experience of teaching. The teachers may or may not have experience with working with children with CCN. 2. Teachers who work with children currently enrolled in a formal education sector in the foundation and intermediate phase with complex communication needs who are non-speaking.	1. Teachers with less than 2 years of experience in teaching 2. Teachers not registered with SACE. 3. Teachers working with children in preschool and senior phase with complex communication needs who are non-speaking. 4. Teachers who work with learners with complex communication needs that have some functional verbal speech.

3.7. Data Collection

Semi structured interview schedule

A semi structured interview schedule (SSIS) is a method that allows the researcher to collect information from a sample of individuals in a standardized order (George & Merkus, 2023). The questions for the SSIS were generated from reading the literature. The semi structured interview schedule included both closed-ended and open-ended questions. The closed-ended

questions limitation was overcome by adding open-ended questions to elaborate further. The open-ended questions allowed more details and a deeper understanding of the participants' perspectives (McCombes, 2022).

The SSIS was conducted using an in-person interview. This type of interview reduces contextual bias and increase reliability, credibility, and validity due to the predetermined and fixed nature of the interview (McCombes, 2022). This research used in-person semi structured interviews to investigate the implementation of literacy learning strategies in the classroom with learners with Complex Communication Needs and participants' knowledge of speech language therapists.

In-person interviews have high response rate and allows for open-ended questions to be more tolerable because participants would be more comfortable in expressing long answers orally than in writing (George & Merkus, 2023). However, they can be time consuming and costly. The researcher overcame these by adhering to the time set for the interviews. The interviews were conducted in the language the participants are comfortable with; English and/or IsiZulu, the languages the researcher was fluent in. The interviews took approximately 45 minutes.

Table 3: Description of the semi structured interview questions

Section	Items	Rationale
Section A Demographic information	9 items	This section was included to make sure participants met the inclusion criteria
Section B Teachers' awareness of AAC and the role of the speech-language therapist	11 items	SLT must contribute to academic prevention Failure of the evidence-based approach. The SLT should support all the learners in literacy development, especially in the foundation phase and work together with

		teachers (ASHA, 2010). Therefore, it is important for teachers to understand the role of SLTs and how they can support them in the classroom. AAC can be used to help support the communication, language, and literacy development of learners with CCN (Beukelman & Mirenda, 2013).
Section C This involved the learning strategies/accommodations made in the classroom to accommodate learners with CCN.	8 items	Teaching strategies play an important role in the classroom. Without adequate strategy, teachers aimlessly project information that does not connect or engage learners (Beukelman & Mirenda, 2013). Therefore, effective strategies need to be implemented to adequately support the literacy development of learners with CCN.
Section D This section involved the barriers teachers are experiencing in teaching these learners.	9 items	Teachers are the driving force of the classroom, and the learners are dependent on the skills of the teacher to adequately facilitate literacy in a functional manner. The barriers teachers are facing in the classroom negatively affect the scholastic achievement of the learners.

Classroom observation checklist (See appendix J)

The teachers' interaction with learners was observed during a normal class activity. An adapted **Communication supporting classroom observation tool** was used in this study. The purpose of this observation tool was to help develop profile features of communication-supporting strategies in a classroom for Grades R, 1, and 2. The test was developed for the educational context in the United Kingdom (Dockrell et al., 2012). Since the observation tool has not been developed for the South African educational context, it was adapted to make the tool more contextually and culturally relevant. The tool was adapted to observe the teacher-learner interaction and the learning strategies being used to teach literacy to learners with complex communication needs who are non-speaking. The researcher used this tool to observe teacher interactions with the learners with CCN in the classroom for an hour.

Pros and Cons of classroom observations

The checklist that was used aids to understand the teacher-learner interaction and the language environment of the classroom which are important for this study. It is further used to identify teachers' support of learners' language and communication development and hence literacy (Dockrell et al., 2012). However, checklists may lead to missing information that is not available on the checklist and further may not cover all the possible behaviours/interactions that may occur; therefore, this was mitigated by making additional notes when observing the classroom interactions.

The tool was based on the following concepts which are important for this research study.

Table 4: Description of the classroom observation checklist

Sections	Items	Rationale
Language Learning Environment This section involved the physical	11 items.	The opportunity for learning means the provision of a communicatively accessible environment. The foundation of such an environment is one where every learner is presumed capable of learning and growing and facilitates the

environment and the learning context of the classroom.		environment that supports the unique learning of learners (Sen, 2021). The researcher obtained information about how teachers modify their classrooms to facilitate literacy development of learners with complex communication needs.
Language Learning Opportunities This section involved the structured opportunities that are present in the classroom to support language development.	5 items.	The zone of proximal development describes the distance between what the child can do independently and what they can do with a more competent adult or peer (Levey, 2014). The teachers provide learning opportunities and support to help the learner to actively play a role in their cognitive development (Wieten & Hassim, 2016) The researcher obtained information on how teachers are provided language literacy strategies to facilitate literacy learning in children with CCN.
Language Learning Interactions This section involved the ways in which the teachers in the classroom interact with the learners.	20 items.	Teachers play an important role in the literacy development of children with complex communication needs within the school environment (Sen, 2021). Teacher-learner interaction has an impression on classroom management and further affects the learning of learners. Furthermore, positive interaction helps the learners' cognitive, social, and mental growth (Sen, 2021)

3.8. Ethical Procedure

Firstly, the ethics certificate was obtained from Macquarie university on March 27, 2023, after completing the ethics course. Then ethical approval was obtained from the non- medical Human Research Ethics Committee on the 19 May 2023 from Witwatersrand university. The researcher then approached the KZN department of education to obtain formal permission to conduct the study at the LSEN primary schools. Once permission was granted, Khalipha school was contacted, and the principal was sent permission letter to conduct the research at their school with the provision of the research information sheet. Thereafter, once permission was granted, the teachers were provided with the participants' information sheet (PIS) explaining what the study was about and invited to participate. The PIS explained that participation involved in person interviews and classroom observations. Once they have read and understood the PIS and agreed to participate in the study, they were invited to sign consent forms for both the interview and the observation. The participants were informed that participation was voluntary, they can withdraw at any time, and their information will remain confidential and anonymous in the write up of the research report. The participants were asked to send PIS and consent forms to the parents of learners with CCN for the researcher to observe the teachers with their children in the classroom. The PIS clearly stated that the study focused on participants' interaction with their children and does not directly involve their child. It also stated that their children's identities will be kept confidential and anonymous. Once all the necessary consent forms were signed, the researcher started the data collection process with interviews then the classroom observations.

3.9. Pilot study

In order to determine the feasibility of the current study, a pilot study was undertaken (Kumar, 2014) with one of the teachers. The aim of the pilot study was to aid the researcher in identifying potential shortcomings within the data collection tools used, inconsistencies, or errors with the instruments used for the semi structured interview schedule and the classroom observation checklist. The one participant was asked to comment on the length, flow and format of the questions for the interview and aid in addition to the questions that would have added value to the study. The participant commented the length of the interview

was optimal, and that the questions asked were easily understood. She did not suggest additional questions or reduction of the questions. Therefore, the participant's responses were included in the main study.

3.10. Data collection procedure

After completing the pilot study, the researcher distributed a Participant Information Sheet (PIS) of both the interview and the classroom observation, to all potential participants, outlining the aims and procedures of the study. Participants were given one day to review the PIS thoroughly. On the following day, they were invited to sign separate informed consent forms, indicating their agreement or refusal to participate in either the interview or the classroom observation or both. Once all the informed consent forms were signed, the researcher commenced the interview. The interviews were held at the teacher's desks in the classrooms on the school premise. At the start of the interview the researcher stated her name and purpose of the interviews. She proceeded to ask the questions and asked for clarification of responses if indicated. At the end of the interviews, she thanked the participants for putting aside time to answer her questions. The interviews conducted with consenting participants lasted approximately 30 minutes. None of the participants consented to audio recording, therefore the interviews were not recorded.

In addition, when the interviews were concluded, the researcher made the arrangement for the classroom observations to commence the following day. The observations took place during the classrooms' morning schedule and language time slots. The classroom observations took approximately one hour to conduct.

3.11. Data Analysis procedure

Data obtained from this study was analysed both quantitatively and qualitatively (Creswell & Hirose, 2019). Quantitatively, descriptive statistics was employed to analyse closed- ended questions. The data was tabulated and analysed using frequency distribution.

In analysing open-ended questions, the researcher followed the steps recommended by (Braun & Clarke, 2006) namely:

- Data familiarization - the researcher read the responses from the participants. Then highlighted specific responses that were significant. This step was crucial for identifying patterns and recurring themes within the data, which would guide further analysis.
- Initial code- the researcher immersed herself in the data to begin identifying and organising the data into groups. Notes were made about responses that were similar or dissimilar. The researcher was in constant contact with her supervisor for guidance in identifying the main themes and sub-themes.
- Generation of themes- once the data was coded, the researcher colour-coded data and combined similar codes into initial themes. These initial themes were then combined into main themes and sub-themes. The resulting themes were then utilised to report on the qualitative part of this study.

3.12. Reliability and Validity

Reliability

Reliability refers to the consistency of the measuring instrument and methods used in the study. Reliability was further used to investigate the quality of the semi structured interview schedule and the classroom observation checklist used to collect the data (Leedy & Ormrod, 2014). Reliability was ensured by following a structured consistent procedure with all the participants and classroom observations.

Validity

Validity refers to the extent to which a chosen measurement instrument can be credible, dependable, and valuable to the study (Bless et al., 2013). Validity is ensured to ascertain whether the instrument covers all the content that it should with respect to the variables (Hamed, 2016). Face validity refers to the subjective assessment of a measurement instrument whether it measures what it is supposed to measure (Cruz et al., 2019). Face validity was used to determine the quality of the semi structured interview schedule and the classroom observation checklist. Face validity was ensured by carefully developing questions based on existing literature and ensuring that the questions asked answers the study aims. Another qualified speech language therapist working with children with CCN at Albert Luthuli

hospital was asked to review the interview questions to ensure they would elicit the appropriate responses to answer the study aims. Furthermore, she was also asked to review the classroom observation checklist to determine whether they probed the objectives and main aim of this study.

3.13. Trustworthiness

To ensure the accuracy, reliability, and integrity of the research study and research process; the following was maintained; credibility, confirmability, dependability and transferability.

Trustworthiness was sustained in this study by engaging in peer debriefing. This refers to engaging with a professional who is outside the context of the study, who was able to provide insights and assist in identifying potential bias (Babbie & Mouton, 2005). During the duration of the study, the research supervisor assisted in highlighting the researcher's subjectivity. Since the supervisor was outside the physical context of the study, she was able to remain objective and compel the researcher remain the same by reflecting on personal experiences and current results and not let one affect the other. Peer debriefing therefore contributed to the credibility of this study (Nowell et al., 2017)

Confirmability

Confirmability refers to the degree of neutrality and objectivity of the study's findings (Korstjens & Moser, 2018). To ensure confirmability, an audit trail including each step of the data analysis was used. The researcher kept a notebook to record information in the interviews and used a classroom observation checklist that included comment section to note any additional information during the observation process. This has helped ensure confirmability of this study (Hadi & Closs, 2016).

Dependability

Dependability refers to the consistency and stability of the study findings and interpretation of (Korsjen & Moser, 2018). To ensure dependability, an audit trail was maintained to document all steps of the research process, including data collection methods. The researcher documented the study approaches and procedures for analysis. Additionally, a peer review

process with the research supervisor was also implemented to verify the consistency of the methodology.

Transferability

This refers to the degree to which the study findings can be extrapolated to alternative contexts or situations (Nowell et al., 2017). To ensure transferability, an audit traill including procedures for data collection and data analysis was used. The researcher provided details of the study procedures.

3.14. Ethical Considerations

Research ethics emphasize the principles and values that are followed to ensure the sensitive treatment of participants (Bless et al., 2013). The researcher received an ethical clearance from the non-medical ethics committee before conducting this research study. Permission to conduct the study was requested from KwaZulu-Natal department of education, and one LSEN school principal.

Informed Consent

Informed consent means that participants selected to be part of the research study have been informed about the nature and purpose of the research study (Bless et al., 2013). The researcher provided the participants with an information sheet and informed consent document concerning the study that included the study aims and procedures. Both the participants and the learners' caregivers were provided with informed consent sheets.

Beneficence

Beneficence means the obligation to contribute to the well-being of others and significance in promoting the welfare of people involved in the study (Bless & Sithole, 2013). This study had no direct benefits to the participants and their learners; however, it aimed to contribute to the national development plan 2030 in attempts to raise quality education of learners with Complex communication needs in South Africa.

Confidentiality

Confidentiality means respecting the participants' privacy and refraining from sharing their sensitive information (Bless et al., 2013). Since this study was conducted publicly with disclosed place and location, only the participants' identities were kept anonymous in the writing process of this report. The participants were referred to as participant 1 and so forth. The participants were informed in the participants' information sheet.

Non-maleficence

Non-maleficence refers to non-inflicting harm to reach a desired beneficial outcome (Sundean & McGrath, 2013). This study did not inflict any harm on the participants as all the expectations were stated prior to the research study. The researcher ensured to inform the participants what to expect from the study and explained to them that they can withdraw from this study at any given time if they felt unsafe.

Discontinuance

Discontinuance refers to participants' right to discontinue their participation at any time they wish to do so (Bless & Sithole, 2013). The participants were informed both verbally and on the informed consent sheet that should they want to withdraw from the research, they had the right to do so without any penalties.

CHAPTER 4: RESULTS

Results were analysed using both descriptive statistics and inductive thematic analysis. Information obtained from descriptive statistics have been represented using tables and figures. Descriptive statistics were used to analyse the closed- ended questions from the classroom checklist. Descriptive statistics information will be presented as frequencies and percentages.

Thematic analysis was used to analyse responses from the open-ended questions from the semi structured interview schedule. Results obtained from thematic analysis are presented according to themes and figures for ease of understanding and to group findings. The researcher has furthermore made use of direct quotations from participants to reinforce the qualitative data.

The results are presented according to the aims of the study.

4.1. Aim 1: To describe teachers' implementation of literacy learning strategies in the classroom with children with complex communication needs.

To investigate the above aim, a semi structured interview schedule with both closed and open-ended questions; and a classroom observation checklist were used. The data was analysed using both descriptive analysis and inductive thematic analysis for quantitative and qualitative data respectively.

Descriptive statistics

Participants were asked questions regarding how they use AAC to facilitate literacy development with learners diagnosed with CCN. Since learners with CCN use AAC to communicate it was important to investigate how the participants are using AAC to facilitate communication and literacy development (See Table 5)

Table 5: Responses to questions on AAC (N=8)

Variables	Frequency of yes responses n (%)	Frequency of no responses n (%)

AAC knowledge in terms of methods (signs, symbols) and devices	3 (37.5)	5 (62.5)
AAC use in the classroom to facilitate literacy development	2 (25)	6 (75)
Need of AAC training for communication and literacy development	7 (87.5)	1 (12.5)

Table 5 revealed that most of participants were not knowledgeable about AAC, and they did not use AAC to facilitate literacy development in the classroom. Most of the participants (n=7) indicated that they could benefit from AAC training to facilitate communication and literacy learning.

Phonological awareness (PA)

PA refers to the ability to understand and recognize sound structure in spoken language. Participants were also asked question about phonological awareness because PA is related to early reading and spelling success because of its association with phonics. See table 6

Table 6: Responses to questions on PA (N= 8)

Variables	**Frequency of yes responses n (%)**	**Frequency of no responses n (%)**
Phonological Awareness (PA) definition	2 (25)	6 (75)
Facilitation of PA skills in the classroom	2 (25)	6 (75)

Table 6 revealed that most of the participants (n=6) are not aware of what PA is and consequently it was not facilitated in the classroom with their learners. However, two participants indicated to be knowledgeable about PA and hence, the were facilitating PA in their classrooms.

Classroom observation checklist – Language Learning Environment

The language learning environment (LLE) involves the physical environment and the learning context of the classroom. The classroom observation checklist was used to obtain information on the Language learning environment. LLE is important in aiding learners take control of their learning, focus on activities, fosters and encourage participation from learners. See table 7

Table 7: Observations of participant in classroom with regards to the LLE (N=8)

Language Learning Environment	**Yes n (%)**	**No n (%)**
Access to AAC material/devices		
Appropriate vocabulary for different lessons is available and within reach	0	8 (100)
Daily class routines with pictures are clearly outlined and visible.	0	8 (100)
Visual schedules are available.	0	8 (100)
AAC systems are available and easily accessible	0	8 (100)
Language and literacy		
Learners' own work is displayed and labelled appropriately.	8 (100)	0
Book specific areas are available.	4 (50)	4 (50)
Literacy specific areas are available.	0	8 (100)
The majority of learning resources and materials are labelled with pictures/words.	1 (12.5)	7 (87)
Resources that are available for free play are easily reached by the learners or easily within their line of vision.	1 (12.5)	7 (87)

Access to AAC materials

Table 7 revealed that none of the eight classes observed had any AAC material available to use for the participants and the learners. For classrooms with learners with CCN who are non-speaking, it was observed the learners did not have access to communication systems. Furthermore, the use of pictures/symbols to facilitate understanding and responses was also not used as mentioned in the interviews.

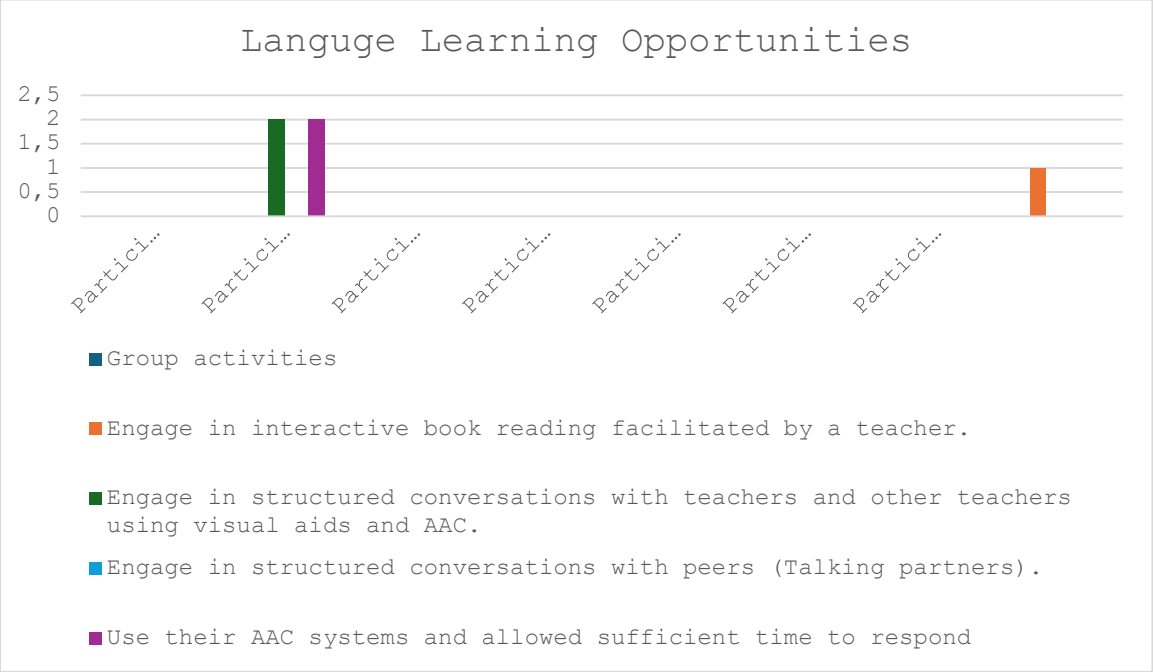
Literacy and language

All the classrooms did not have a range of books and appropriate vocabulary for learners to engage with and use within different contexts. Four of the eight classes had different book specific areas where they keep their books, however, story books were not available. Learners with CCN who have not yet acquired literacy skills rely on picture/symbol communication for comprehension, and expression, therefore it was disappointing to observe only one classroom where learning materials are labelled with pictures

Language learning Opportunities

The researcher also observed the structured opportunities provided by participants to support language and literacy development. The items are scored in terms of observed frequency of opportunities observed in 60 minutes during an English language class session. See figure 1

Figure 1: Frequency of Language Learning Opportunities(N=8)



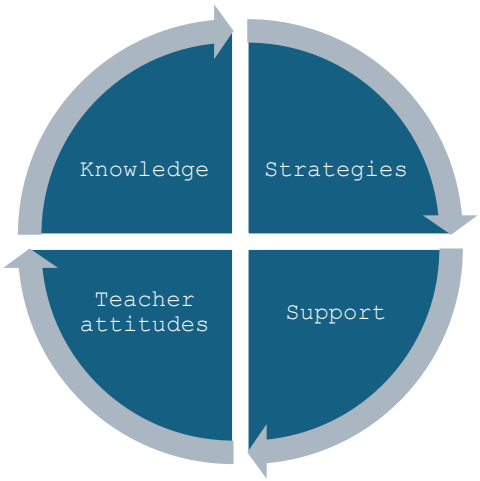
None of the learners in the 8 classes were encouraged by their teachers to participate in group activities. Learner opportunity to engage in interactive book reading by the participants was observed only once in one classroom (P8). Opportunities to engage in activities and

conversation, and for learners to use their AAC systems was observed twice in one classroom (P2), respectively. There were no opportunities for learners to engage in structured conversations with other learners. In conclusion, the participants provided little opportunities for their learners to participate and communicate.

Thematic analysis

The analysis of the qualitative data for the above aim yielded four themes impacting literacy learning strategies to facilitate literacy development for learners with CCN.

Figure 2: Themes generated for the aim teachers' implementation of literacy learning strategies in the classroom with children with complex communication needs.



Following is an elaboration of the themes presented in figure 2

4.2.1 Knowledge

The first theme identified was knowledge related to AAC and literacy. Five participants (P1, P3, P4, P5, P8) were not aware of what AAC is. In a school that has learners who present with CCN one would expect more participants to be knowledgeable about AAC.

Participant 8 reported… '*I don't know what [AAC]* is..." Additionally, participant 3 said that "*…the learners won't even know what we are talking about even if we had [AAC devices] in our school…*".

Those participants (P2, P6, P7) who indicated that they had some knowledge and awareness of AAC, only 2 (P2, P7) are using AAC. These two participants were using low tech AAC such as pictures and idiosyncratic signs in their classrooms.

With regards to literacy inclusion with learners who are non-speaking, seven participants indicated that they include literacy in their lessons. The participants (P1, P5, P6, P7, P8) primarily taught the names of alphabet letters only. Others encouraged the development of auditory comprehension such as reading stories to the learners (P2, P4) and asked open-ended questions (P4). Furthermore, most of the participants (P1, P3, P5, P6, P8) were not aware of what Phonological awareness (PA) is. Three participants (P2, P4, P7) were aware of PA but only one (P4) was including it in her lessons, she stated the following:

"I do rhyming, sounding letters in words and identifying first sounds with pictures" (P4).

Three participants (P3, P5, P6) reported they don't teach PA because "*the learners can't understand it, teaching letters and sounds are confusing to them…*" (P3, P6).

4.2.2 Strategies

It was encouraging for the researcher to note that the participants were using strategies in the classroom to facilitate the development of language and learning in the classroom. five strategies were given by the 8 participants which included, adaptation of the teaching material, repetition and simplified information, focus on life skills, sitting placements and participants' internal factors that helped them to facilitate successful teaching.

Participants (P2, P4, P5, P7), stated they included use of pictures to adapt the teaching material as the curriculum is not easily understood by their learners.

Participant 2 stated that "*I use pictures to help with understanding*",

P7 further stated that "*my learners do not understand the curriculum but the pictures help*".

Additionally, four participants (P1, P3, P6, P8), have identified using repetition as a successful strategy to teach learners with CCN to learn and retain information.

"*My learners take time to understand information, I have found that when I repeat the lessons, they understand better…*" (P2).

The participants mentioned they focused on life skills to accommodate their learners.

P7 stated that "*the work should focus on skills more than theory*".

P3 further stated that … "*we should be teaching skills that they will use in their everyday life*".

Moreover, three participants (P3, P5, P7) reported to grouping their learners and placing them in front of the class to be helpful in terms of managing the classroom environment and facilitating participation.

Finally, the participants have reported their own personal factors that contribute to teaching their learners. These includes patience, focus on one activity, repetition, and persistence.

P1 reported "*I have found doing one activity at a time for a long time to be helpful more than rushing through the curriculum*",

P4 further stated that, "*being patient and persistent with these learners is a way to go*".

4..2.3 Teacher attitudes

Teacher attitude plays an important role in the development of skills and learning of learners with CCN. The participants have reported four factors that contribute to or hinder successful learning environment within their classrooms. The factors mentioned were those related to learners' abilities more than participants' skill, knowledge, and self-efficacy. These factors include, (i) forgetfulness (P1, P7); (ii) lack of understanding between learners and participants (n=8); (iii) learners not understanding curriculum work (P1, P2, P3, P5, P6, P7, P8); (iv) lack of communication from learners (P3, P4, P6).

The participants have indicated that it takes them a long time to get through the curriculum as their learners forget and they must repeat the information many times. They further explained that their learners do not understand the information that is presented to them, hence it is challenging to understand what they know and what they struggle with (P1, P2, P3, P5, P8). Moreover, the participants mentioned that the learners' lack of speech is a challenge as it is difficult to interact with them…

" *Their lack of expression is challenging because I don't understand them*" (P6),

P8 stated that *"not understanding what I say or what they try to say is frustrating to us both*".

"*The learners should be taught life skills and not literacy and the curriculum. Literacy is too complex for them…*" (P3)

4.2.4 Support

All the participants (N=8) believed that they are not adequately trained to teach learners with CCN. Seven participants indicated they need AAC support to facilitate communication in their classrooms. They reported they need support for the following reasons, to help their learners communicate their needs and what they learnt in the lesson. Some participants (P2, P7, P8) further expressed that it was difficult to understand the learners and as result both the participants and the learners get frustrated. All eight participants indicated they do not have support from department of education in terms of continued professional development workshops and provision of learner support materials and resources. All the participants indicated they do not have adequate AAC resources to support their learners with communication.

"*The school and department are not helping; it is up to the teacher to figure it out on her own*" (P8)

´The department provided training in the past when inclusive education was introduced, but not anymore" (P3)

In summary, it is quite alarming that the participants being in a school that accommodate learners with CCN that they do not have the confidence and adequate training to teach these learners. They do not have necessary resources to aid their learners participate fully and efficiently in the classrooms. Furthermore, there is no Speech language therapist assistance as well as continued professional development workshops to support these participants which further puts the learners at a disadvantage for literacy development.

4.2. Aim 2: To investigate teachers' interaction with learners with Complex Communication Needs

To investigate teacher's interaction with their learners, the researcher observed eight participants in the classroom with CCN learner(s), using a classroom observation checklist. The following shows results for descriptive statistics from the classroom observation checklist section on language learning interaction (LLI) for the above aim. This section describes the

way the participants interact with their learners to facilitate classroom management and learning strategies that participants use to facilitate teacher-learner interaction. The items in this section are scored in terms of frequency of observed interaction (up to 5 times). The observed responses were divided into three categories namely, (i) learner-oriented responses, (ii) interaction promoting responses, and (iii) language and literacy modeling responses for ease of understanding. The category guidance was adopted from (Girolametto & Weitzman, 2002).

Learner-oriented responses

Figure 3: Descriptive statistics of teacher learner interaction based on observation checklist pertaining learner-oriented responses (N=8)

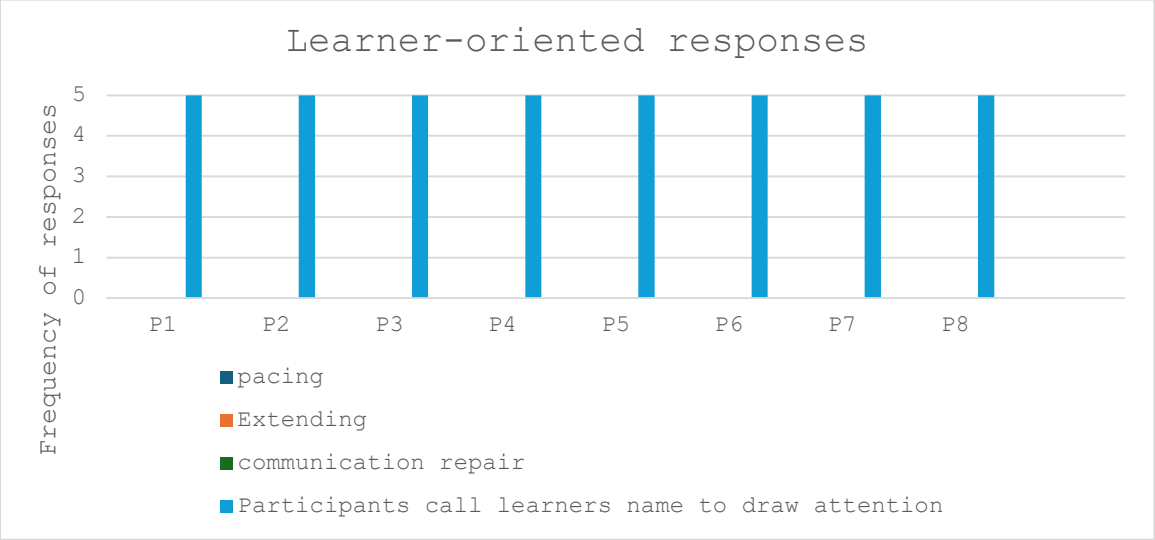


Figure 3 revealed that the researcher did not observe the following strategies of pacing, extending and repairing communication. However, she did notice that in all classrooms, participants used the learners' names to get their attention. These interaction strategies encourage and maintain interaction between the participants and learner. It was disappointing that these communication interaction strategies were not consistently utilized.

Interaction promoting responses

Interaction promoting responses are strategies aimed at promoting active engagement with learners in on going interactions.

Figure 4: Frequency of observed pertaining interaction promoting responses in the classroom(N=8)

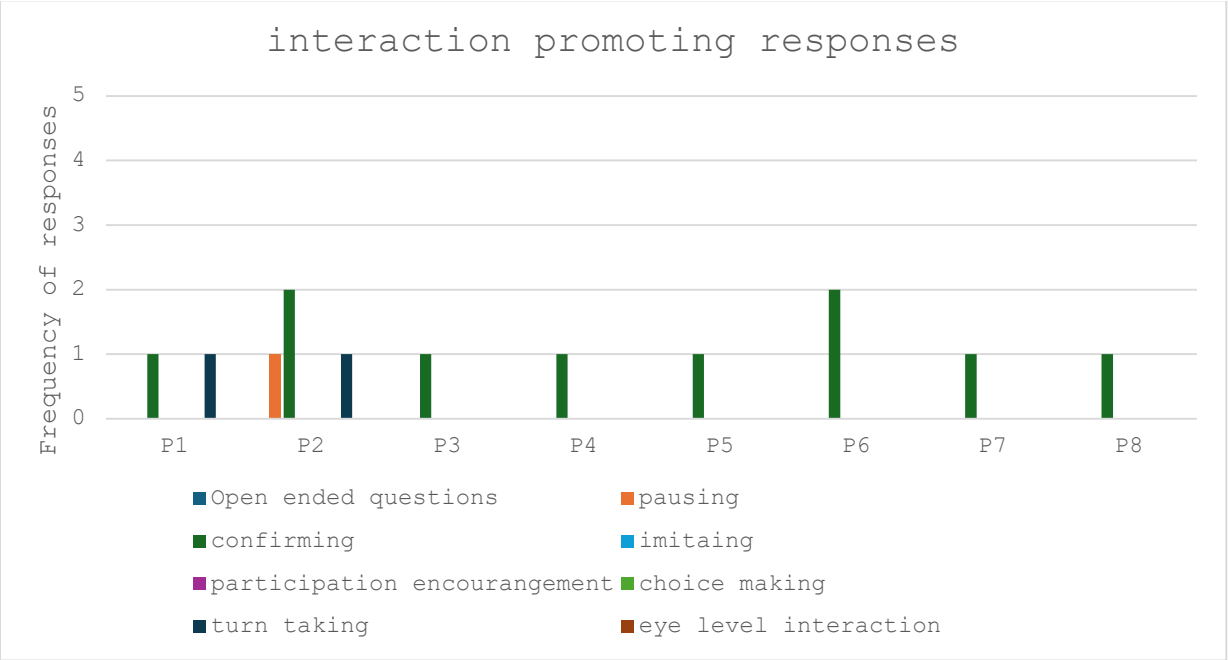


Figure 4 revealed that the researcher observed three types of interaction promoting responses: pausing, turn-taking, and confirmation. Among these, confirmation was the most frequently observed. Furthermore, participants' pausing expectantly and frequently during interactions with learners to encourage their turn-taking and active participation was observed only once in one class (P2). Turn taking is an important strategy in communication and learning, however, it was only observed once in two classrooms (P1, P2).

The interaction observed between the participants and their learners was dominated by the participants, with limited opportunities for their learners to respond. Additionally, the learners were not given the opportunity to make their own choices or to communicate their preferences. It was noted that participants made decisions for them.

Language modeling responses

Language modeling responses include strategies that demonstrates linguistic forms, content, and use

Figure 5: Frequency of observed language and AAC modeling responses in the classroom(N=8)

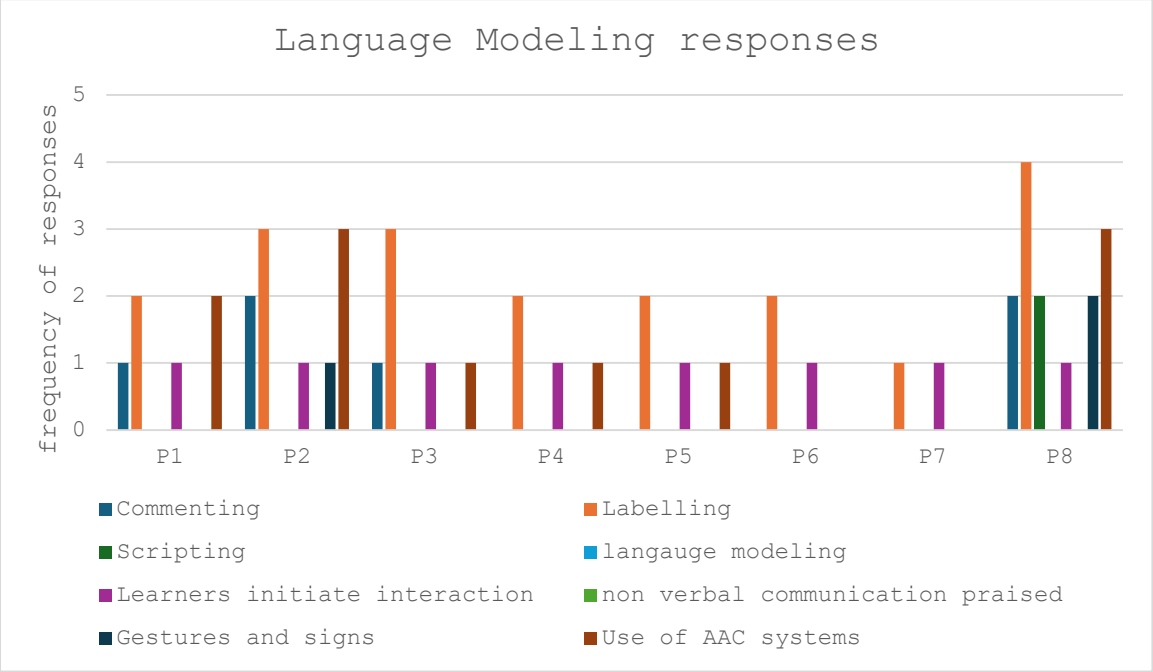


Figure 5 revealed that the participants frequently used the following MODELING responses labelling (n=8) and use of AAC systems (pictures) (n=6) the most to facilitate understanding. With the following strategies observed the least, scripting, modeling language using AAC strategies and systems (n=0). Furthermore, only half of the participants used commenting strategy to facilitate language development.

There were no AAC devices available, therefore, learners were not prompted to participate in conversations or encouraged to respond using any alternative means of communication. This lack of modeling led to communication breakdowns between participants and learners with CCN. It was observed that attempts to repair these breakdowns and encourage nonverbal communication from learners were not evident. Consequently, learners-initiated interactions was observed only once per class, and unresolved breakdowns demotivated them from further attempts to communicate

4.3. Aim 3: To describe the teachers' awareness of the role of Speech Language Therapist support in the underserved schools.

Participants were asked to respond to questions on what speech language therapy is, role of SLT and the support they can expect to receive from an SLT. The following shows results

from both closed and open-ended questions from the semi structured interview pertaining participants' knowledge regarding Speech language therapists' role in education. (N=8)

The participants were asked regarding their knowledge and awareness of speech language therapists and their role in education. The researcher found it encouraging that most participants (n=6) are aware of Speech-Language Therapists (SLTs). However, it was concerning that only half of them understand the SLTs' role in education.

P1 stated that … "*their role is to help learners with speech, support teachers with better communication between them and their learners''*.

Additionally, P2 stated that… "*they [SLTs] help with saying sounds, prompting, supporting teachers know how to work with learners who are not speaking*".

None of the participants mentioned literacy development support and adaptation of learning materials as within the SLTs' scope of practice in education. Additionally, only two participants (P2, P7) had undergone Continuing Professional Development (CPD) training on Autism and the role of speech-language therapists in the past 5 years, while six participants (P1, P3, P4, P5, P6, P8) had never received any professional training before or worked with SLTs.

Furthermore, the participants were asked whether they receive support from SLTs and it was alarming that they do not receive any support. However, it was encouraging to note that the participants were open to collaborating with SLTs. They all expressed a need for SLT support to enhance communication skills and effectively use AAC for literacy development among learners. Specifically, teachers indicated a need for SLT support in facilitating communication between learners and educators (P1, P3, P4, P5, P6, P7, P8), as well as assistance with speech sounds, articulation, and signing (P2, P4). P1 stated, "*I need help for effective communication between my learners and myself*". P3 further stated that they need SLT support to "*help me understand what my learners are trying to communicate".*

CHAPTER 5: DISCUSSION

5.1. Aim 1: To describe teachers' implementation of literacy learning strategies in the classroom with children with complex communication needs.

The following shows discussion of results for descriptive statistics of both the checklist and semi structured interview schedule and thematic analysis of the interviews.

Descriptive statistics of the classroom checklist

Language Learning Environment (LLE) and Language Learning Opportunities (LLO)

LLE is important in aiding learners take control of their learning, focus on activities, fosters and encourage participation from learners. Descriptive statistics showed lack of access to AAC material in all the classrooms. None of the classrooms had access to AAC materials and devices for their learners with CCN. The findings conducted by Chisango & Lepheana (2022) investigated challenges in implementing inclusive education in South Africa. These challenges included lack of learning and teaching materials amongst other things, which were also noted in this study. The lack of resources in this study, i.e., AAC devices led to communication barriers, reduced access to the curriculum and isolation which resulted in reduced interaction and participation in the classrooms. The classroom environment was not communicatively accessible to support the unique learning of the learners.

Moreover, previous research has shown that learners from low economic backgrounds are placed at a disadvantage in learning and acquiring language and literacy skills due to unfit learning environment and lack of necessary resources (American Psychology Association, 2017; McGillion, 2017; Lecheile, 2020). Evidently, as such in this study, the lack of adequate resources in the classrooms to support learners with CCN contributes to lack of literacy development and teachers' competency in facilitating literacy skills with these learners.

Furthermore, according to Vygotsky's socio-cultural theory the environment, including tools and artefacts in those environments play an important role in facilitating learning, therefore, the lack of tools such as AAC devices means limiting the learners with CCN access the curriculum.

According to Vygotsky, cultural tools such as language, symbols, and artefacts facilitate learning. AAC devices are tools designed to facilitate communication for individuals with

CCN. The lack of these tools means that students are deprived of essential strategies that could help them bridge their communication gaps. Therefore, this limited the learners to access to the curriculum and reduced their ability to engage in classroom activities which usually depend on effective communication.

Additionally, relating to Language learning the opportunities provided by participants to support language and literacy development of learners with CCN. The results showed that the majority of participants (n= 7) did not provide any opportunities for their learners who are non-speaking to engage in conversations, group activities and use AAC systems. The participants had no resources and limited skills to provide structured opportunities for their learners who are not speaking. According to Vygotsky's zone of proximal development, providing opportunities helps facilitate the gap that the learners can achieve literacy attainment independently and what they can achieve with the more knowledgeable teacher using AAC strategies. By applying the concept of the Zone of Proximal Development for these learners, it involves understanding their current abilities and providing appropriate support to help them achieve their potential by using AAC devices and creating supportive environment to enhance learning opportunities and specifically, literacy.

Semi structured interview schedule discussion.

Descriptive statistics from the interview revealed that half of the participants (n=4) were not knowledgeable about AAC and phonological awareness and as such, they did not use AAC strategies/ devices or facilitate phonological skills. Through thematic analysis, the researcher was able to classify findings into reasons pertaining to the descriptive findings. Following are the themes that emerged.

5.1.1 Knowledge

Most of the participants (n=5) were not aware of what is AAC. The participants who were knowledgeable about AAC (n=3), only two were using AAC, which were limited to pictures and idiosyncratic signs. Additionally, when relating to literacy development, seven participants indicated they include literacy in their lessons which were limited to alphabetical names only. Results from a study by Andzik et al., (2017), investigating AAC services in American inclusive education schools with special needs educators reported,

inadequate training of teachers having an impact on facilitation of AAC and successful educational outcomes of learners with CCN.

As seen in this study lack of knowledge regarding AAC and phonological awareness had an impact on literacy teaching. The participants had limited understanding of what AAC is and its contribution to learners with CCN, hence, they were not using AAC in their classrooms. They appeared to lack knowledge on the effectiveness of AAC use for learners with CCN to facilitate phonological awareness to improve literacy skills. The participants did not mention AAC use benefits such as access to literacy, increase in participation, improvement of language skills and facilitation of social skills. The two participants who were using AAC included pictures from magazines and newspapers to help aid understanding on taught concepts. The use of pictures was limited to facilitating comprehension rather than facilitating responses and expressive communication from learners.

Furthermore, literacy facilitation was mainly limited to alphabet names which showed learners with CCN are not taught the foundational skills needed to develop their literacy skills. However, seven participants have indicated they would benefit from AAC training, which shows positive attitude for future development.

5.1.2. Strategies

The participants mentioned the following strategies they employ in their classrooms to facilitate learning; adaptation of teaching material using pictures, and repetition of activities. Teaching strategies play an important role in the classroom, especially with learners with CCN. It was commendable to see the participants using these two strategies to facilitate learning. However, they did not use strategies such as phonological and phonemic awareness, AAC strategies, shared/facilitated reading and visual aids to facilitate literacy development. The use of pictures was limited to nouns of different learning themes such as transport, fruits, vegetables, colours, shapes etc. furthermore, the pictures were used to facilitate understanding more than they were used to aid learners with CCN to express themselves. In addition, literacy learning strategies are important in facilitating communication enhancement, supporting literacy acquisition, promoting academic achievement and achieving independence. Without AAC strategies and facilitation of

literacy skills, learners with CCN will rely on communication partners to select and provide vocabulary for them, which in turn limits their participation across all environments. Additionally, the skills of the communication partners play an important role in ensuring that sufficient vocabulary is provided.

5.1.3. Teacher attitudes

Teacher attitude played an important role in the development of skills and learning of learners with CCN. The participants (n=8) reported the factors that impact successful teaching in their classrooms are, learners' cognitive skills such as forgetfulness and lack of understanding of the curriculum work(n=7), and lack of effective communication from learners(n=3). Furthermore, one participant reported literacy is too complex for the learners with CCN to comprehend. These results are similar to the results from Ngcobo and Bornman (2024) pre-training study regarding 'teachers' perceptions of the general academic abilities of learners with CCN'. Their study aimed to investigate special school teachers' perceptions of their own abilities related to teaching learners with CCN and their perception on skills of learners with CCN. Their results showed teachers' perceptions of their learners' abilities to learn, being independent and obtaining a job in the future was limited. However, the results showed positive perception post training. The participants' attitudes in this study relates to lack of knowledge of effective strategies available to effectively teach learners with CCN.

5.1.4. Support

All the participants reported they lacked sufficient training and support to teach learners with CCN. These results are similar to research done by (Simacek et al., 2021) which reported that the lack of training for special needs teachers leave learners with CCN without proper and effective guided interventions. The participants reported "the school and department are not helping; it is up to the teacher to figure it out on her own". The participants further reported that they do not receive workshops and necessary resources to assist them in their teaching process. They further stated the need for training and provision of AAC devices. Lack of support from Speech language therapists and the department of education in relation to continued professional training was seen to be an impact in insufficient teacher training.

5.2. Aim 2: To investigate teachers' interaction with learners with Complex Communication Needs

The participants' interaction with learners with CCN into three categories, namely, learner-oriented responses, interaction promoting responses, and AAC and language modeling responses, and therefore will be discussed according to those categories.

Learner-oriented responses

These responses are used to create and maintain a shared conversation between the teacher and the learner. Learner oriented strategies encourage and maintain interaction between teachers and learners. Descriptive statistics showed all the participants used learners' names to get them to attend to activities. However, strategies such as pacing and extending to facilitate interaction was not utilized by all the participants. As a result, there was no attempts to repair communication breakdown between the participants and their learners. This led to limited initiation and participation from learners and therefore because they do not participate, they were often excluded from certain activities. This was as a result of teachers' limited knowledge and training that helped them to effectively manage the conversation. Furthermore, the learners with CCN had no means of effective communication strategies in place to maintain a conversation. This led to a breakdown in communication.

Similarly, a study done by (Babadjanova, 2020) demonstrated that effective classroom management helps teachers create better learning and teaching process which makes classroom lessons systematic and influential for their learners. Hence, the lack of effective classroom management results in breakdown in communication and interaction. Which further results in learners with complex communication needs being excluded in activities.

Interaction promoting responses

In the observed classrooms, the most frequently used strategy by participants was responding to learners' interactions by confirming their learners' intentions. This was observed in six classrooms (P1, P3, P4, P5, P7, P8) where it occurred once, and in two classrooms (P2, P6) where it was noted twice. Notably, participants would confirm learners' intentions only once; regardless of whether they correctly understood the learners' communication, they proceeded with the activity. This practice resulted in limited opportunities for learners to

respond and actively engage, often leading to misunderstandings that the learners could not clarify due to a lack of alternative communication means.

Moreover, non-speaking learners were typically restricted to answering closed-ended questions that required simple yes or no responses. They were not given the opportunity to engage with open-ended questions, further limiting their potential for active participation. Additionally, participants did not provide opportunities for learners to make choices in their responses, express what they wanted, or engage in conversational or narrative activities. This lack of engagement and autonomy likely contributed to the development of learned helplessness among the learners.

These findings are consistent with the study by Brett (2021), which concluded that teaching strategies employed by educators significantly influence the academic performance and achievement of learners. Ineffective teaching strategies, as highlighted in this study, can contribute to learned helplessness by limiting learners' opportunities for meaningful engagement and choice-making.

These results are supported by Vygotsky's socio-cultural theory which emphasises the role of social interaction and the knowledgeable partner. The participants lacked information on different strategies and support from speech language therapists to help employ effective interaction strategies to maintain active engagement with their learners. Furthermore, the disproportionate teacher-learner ratio led to teachers not having the capacity to give learners with CCN enough time to participate. The study done by Chisango and Lepheana in 2022 highlighted the challenges faced in South African inclusive education schools as being overcrowded classrooms and disproportionate teacher-learner ratio. The teachers typically had more learners in their classrooms without teacher assistants, which contributed to lack of enough time given to learners with CCN to participate and respond back.

AAC and language modeling responses

In the study, the use of labelling (n=8) and AAC systems, specifically picture-based systems (n=6), emerged as common strategies aimed at enhancing comprehension among learners. These strategies were employed exclusively to aid understanding, rather than to encourage responses from the learners. Notably, the labels utilized were limited to nouns, including categories such as animals, food, vehicles, furniture, and clothing. Despite the potential of

these pictures to facilitate responses, they were not used for this purpose. Moreover, no AAC devices were available, which meant that learners were neither prompted to participate in conversations nor encouraged to use AAC symbols to respond. Consequently, non-speaking learners, who generally do not have reliable communication means, were often excluded from conversations. When they were included, their engagement was restricted to only viewing the pictures presented to them.

Lack of knowledge about AAC was a contributing factor to not using it effectively to facilitate responses. However, lack of resources also played a major role. The school had no AAC systems available. Furthermore, the demands of the classroom work and the learners with CCN's communication abilities and capabilities posed a challenge for participants. This assertion is further supported by a study done by (Chisango & Lepheana, 2022), which highlighted challenges faced by South African inclusive education schools, including but not limited to lack of teaching and learning materials, lack of support from department of education and lack of supervision by school management teams.

5.3. Aim 3: To describe the teachers' awareness of the role of Speech Language Therapist support in the underserved schools.

Results indicated that most participants (n=6) demonstrated knowledge about Speech-Language Therapists (SLTs), with 75% (n=6) reporting familiarity about the profession. Furthermore, 50% of the participants were aware of the specific roles SLTs play in educational settings. P1 reported that … "*their [SLTs] role is to help learners with speech, support teachers with better communication between them and their learners''*.

However, it was noted that the participants received no support from SLTs. The role of Speech-Language Therapists (SLTs) in education encompasses the prevention of academic failure through the implementation of evidence-based approaches and the provision of support to all learners and educators in speech, language and literacy development (HPCSA, 2017). Consequently, the absence of such support from SLTs contributes to an elevated incidence of academic failure among non-speaking learners due to lack of communication, language and literacy intervention. Research done by (Bornman & Donohue, 2015) suggested that lack of SLT support hinders academic achievement of learners who experience barriers to learning and leads to teacher frustration as they struggle to overcome those barriers. The

lack of SLT support, prior and current, suggested that the participants had not received in service training related AAC and literacy facilitation of learners with CCN. Additionally, this explains the lack of knowledge of AAC and phonological awareness as mentioned in aim 1.

The findings of this study suggest a need for collaboration between SLTs and teachers to promote language and literacy skills in learners with complex communication needs. The participants struggle to overcome communication barriers between them and their learners. This ineffective communication is frustrating to both the participants and their learners and will have an effect in the academic performance of the learners because they do not have functional means of communicating their understanding, or lack of the curriculum content.

CHAPTER 6: CONCLUSION

The findings of this study highlighted that, lack of resources such as AAC devices, knowledge of AAC and literacy strategies, teacher skills and lack of support from speech language therapist contributed to the challenges faced at the low-income schools. Special-school teachers are encouraged to use variety of communication strategies and techniques to aid their learners participate in classroom activities. As a result, to enhance their communication, participation, socialisation and academic achievement, learners with CCN can benefit from AAC. The findings also have highlighted the need for teacher training in relation to AAC and literacy implementation for learners with CCN. The prominent factor affecting effective literacy teaching was limited skills and knowledge to what AAC is, and therefore the implementation and use of AAC strategies to facilitate expressive and receptive language and communication skills.

Implications

Discipline of SLT

The results from this study revealed the need for collaboration between speech language therapists and teachers for the positive impact on promoting language and literacy skills in inclusive education with learners with CCN. The SLT's knowledge and skills combined with mentoring and collaborating with teachers can contribute towards the need to support the academic achievement of learners who are non-speaking. Furthermore, this study highlighted the importance of SLTs in equipping teachers to support communication and facilitate literacy development of learners with CCN. SLTs need to provide targeted support and training to teachers and enabling them to integrate literacy strategies by understanding and providing literacy learning strategies for learners with CCN.

The SLTs need to collaborate with department of education to ensure that inclusive schools in low-income communities receive on-going training tailored specifically to aid teachers in understanding CCN and creating a more inclusive learning classrooms to enhance communication and literacy opportunities for these learners. Therefore, expanding SLT services to focus on teacher training are crucial steps in addressing communication and literacy facilitation barriers faced by these learners.

Education Context

To effectively support communication for learners with Complex Communication Needs (CCN) in special schools, a multifaceted approach is essential. Special-school teachers should be adequately trained to support communication for these learners, which includes the provision and use of Augmentative and Alternative Communication (AAC) devices. Providing these devices within the schools is important, as they play a crucial role in enabling effective communication. Furthermore, district officials should be proactive in offering ongoing professional development support for teachers and monitoring the implementation of AAC devices to ensure consistent and impactful use. The professional development support should include collaboration with SLTs to conduct in service training with teachers.

Theoretical

The theoretical principles of the Zone of Proximal Development (ZPD) were observed within the current study between the participants and their learners. By applying the concept of the ZPD for these learners, it involves understanding their current abilities and providing appropriate support to help them achieve their potential by using AAC devices. Furthermore, creating supportive environment to enhance learning opportunities and specifically, literacy skills. Additionally, it implies equipping teachers with necessary skills, resources and support. Special-school teachers who work with learners with CCN need knowledge and skills regarding AAC strategies to effectively support and facilitate literacy development and general learning of learners with CCN.

Limitations of study

The results of this study are based on a smaller number of participants and a single school context. The smaller sample size does not allow a wider generalization. Even though the sample size was small, the information gained contributes to the clinical and theoretical implications. Furthermore, the sample size allowed for more details of the participants and ampler time for further detailed information during the interviews. Even though the sample size was small the results have a significant contribution to the SLT profession by highlighting the importance of teacher training and use of AAC resources for benefit of learners with CCN in low-income schools.

Future directions for research

Future research in this field could benefit both the SLTs and special needs educators' professions. The research should focus on a wider sample size with different schools to ensure a more representative experience. To include pre-testing before intervention and post-testing after providing training and intervention. Furthermore, future research should focus on teacher training regarding literacy learning strategies in their classrooms. Moreover, research to be done on how to teachers in creating inclusive communicative classrooms for their learners with complex communication needs.

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Appendices

Appendix A: Ethics clearance certificate

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Makgetloa

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H23/05/13**
PROJECT TITLE	Literacy learning strategies implemented by teachers to support the literacy development of learners with Complex Communication Needs in underserved educational context in Kwa zulu Natal
INVESTIGATOR(S)	Ms M Makgetloa
SCHOOL/DEPARTMENT	Human and Community Development/
DATE CONSIDERED	19 May 2023
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	20 November 2026

DATE 21 November 2023 **CHAIRPERSON** _____
(Professor J Watermeyer)

cc: Supervisor : Dr A Mupawose

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **A SIGNED COPY** returned to the Secretary electronically. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I/we agree to completion of a regular progress report. For Minimal and Low Risk studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

_____ 02/06/2023
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix B: Pinetown district permission letter

KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE HEAD OF DEPARTMENT

Private Bag X9137, PIETERMARITZBURG, 3200
Anton Lembede Building, 247 Burger Street, Pietermaritzburg, 3201
Tel: 033 392 1063
Email: Phindile.duma@kzndoe.gov.za

Enquiries: Phindile Duma **Ref.**:2/4/8/114

Ms MD Makgetloa
34 Stapleton Road
PINETOWN
3600

Dear Ms Makgetloa

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"LITERACY LEARNING STRATEGIES IMPLEMENTED BY TEACHERS TO SUPPORT LITERACY DEVELOPMENT FOR LEARNERS WITH COMPLEX COMMUNICATION NEEDS IN UNDERSERVED SCHOOLS IN KZN, PINETOWN"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 28 August 2023 to 31 August 2026.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

PINETOWN DISTRICT

Mr GN Ngcobo
Head of Department: Education
Date: 30 August 2023

Appendix C: Principal permission letter



KHALIPHA SPECIAL SCHOOL
(LEARNERS WITH SPECIALISED EDUCATION)-LSEN
PO Box 40326 Tel: 031-5011041
REDHILL
4071
Email: khaliphaspecialschool@gmail.com



Date: 13 October 2023

To: Makgetjepe Dineo Makgetloa

Re: Permission to conduct research at Khalipha

Please be informed that a permission has been granted to you Makgetjie Dineo Makgetloa to conduct a research on the literacy learning strategies implemented by teachers to support the literacy development of learners with complex communication needs in underserved schools in KZN Pinetown.

We are looking forward to see you.

Regards

.....
B.D. Gumede (Principal)

KHALIPHA SPECIAL SCHOOL FOR L.S.E.N
K545 Kunatha Road, Kwa Mashu
P.O. Box 40326
Red Hill, 4071
Tel: 031 565 2201

Appendix D: Teacher information sheet

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG 100 1922 2022

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Structured interview information sheet

Greetings

My name is Makgetjepe Dineo Makgetloa. I am a master's student in the Speech Pathology and Audiology department at the University of the Witwatersrand, Johannesburg. My supervisor is Dr. Anniah Mupawose. I am conducting a research study about teachers' implementation of literacy learning strategies for their learners with Complex Communication Needs who are non-speaking and how they interact with them daily. The study title **is investigating the literacy learning strategies implemented by teachers to support the literacy development of learners with Complex Communication Needs in underserved schools.**

I am inviting you to take part in the interview which will include questions about Speech Language Therapists, Augmentative and Alternative Communication (AAC), the strategies or accommodations you make in the classroom as well as barriers you encounter when teaching learners who are non-speaking.
If you decide to take part, your participation in this research study will last about 30-45 minutes The interview will take place at school in the teachers' office during working hours.

With your permission, I would like to audio record the interview. This will aid in the data transcription and the data analysis procedure. This data will be stored in a password-protected laptop for 5 years. Only the researcher will have access to the data. The interview will be confidential and anonymous from other people. Only the researcher will know your identity because it is an in-person interview. When I share the results of the research study, I will not include your name or anything else that could identify you.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study. You will be provided with recommendations/strategies on how to facilitate literacy development with your learners at the end of this research.

This research study is not associated with any risks. Should you feel uncomfortable with the questions, please let the researcher know, and feel free to terminate the interview at any given time. The data collected will be stored and can be used by other researchers depending on their own ethical clearance, however, your personal information will not be disclosed.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,

Makgetjepe Dineo Makgetloa
072 802 4973
2634210@students.wits.ac.za

Supervisor:
Dr. Anniah Mupawose
011 717 4571
Anniah.Mupawose@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
1922 2022
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Classroom observation information sheet

Greetings

My name is Makgetjepe Dineo Makgetloa. I am a master's student in the department of Speech Pathology and Audiology at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Anniah Mupawose. I am conducting a research study about teachers' implementation of literacy learning strategies for their learners with Complex Communication Needs who are non-speaking and how they interact with them daily. The study title is **investing the literacy learning strategies implemented by teachers to support the literacy development of learners with complex communication needs in underserved schools.**

I am inviting you to take part in the classroom observation during language and life skill lessons/circle time. The observation will focus on; the language learning(classroom) environment, the language learning opportunities and the interaction between you and the learners who are non-speaking. I would be looking at how you interact with the learners and how they interact with you, the materials and aids you use in class to help facilitate understating and probe responses, the opportunities you provide in class and the barriers you experience with regards to interaction. If you decide to take part, the observation will take one hour to conduct.

Your identity will remain confidential and anonymous. Only the researcher will know your identity. When I take observation notes and share the results of the research study, I will not include your name or anything else that could identify you.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study. Should there be a need, you will be provided with recommendations on how to facilitate literacy with your learners at the end of this research.

This research study is not associated with any risks. Should you feel uncomfortable with the classroom observation, please let the researcher know, and feel free to terminate the observation at any given time. The data collected will be stored and can be used by other researchers depending on their own ethical clearance, however, your personal information will not be disclosed.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,



Makgetjepe Dineo Makgetloa
072 802 4973
2634210@students.wits.ac.za

Supervisor:
Dr Anniah Mupawose
011 717 4571
Anniah.Mupawose@wits.ac.za

Appendix E: Teacher consent form

Title of project: Investigating literacy learning strategies implemented by teachers to support the literacy development of learners with complex communication needs in underserved schools.

Name of researcher: Makgetjepe Dineo Makgetloa

I, ..., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study.	YES	NO
I agree to take part in the interview.	YES	NO
I agree that the interview may be audio recorded.	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their research report.	YES	NO
I understand that my participation will remain anonymous (my name will not be used by the researcher in their research report)	YES	NO
I agree that other researchers may use the information I provide in my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on.	YES	NO

..... (signature)
..... (name of participant)
..... (date)

....(signature)
..... (name of researcher/person seeking consent)
..... (date)

Title of project: Investigating literacy learning strategies implemented by teachers to support the literacy development of learners with complex communication needs in underserved schools.

Name of researcher: Makgetjepe Dineo Makgetloa

I, ……., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study.	YES	NO
I agree to take part in the classroom observation.	YES	NO
I agree that the interviewer can observe me in the classroom interacting with my learners.	YES	NO
I understand that my participation will remain anonymous (my name will not be used by the researcher in their research report)	YES	NO
I agree that other researchers may use the information observed in my classroom (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on.	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… ……(signature)
…… (name of researcher/person seeking consent)
…… (date)

Appendix F: Parent information sheet

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG 1922 2022

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Dear Parent

My name is Makgetjepe Dineo Makgetloa. I am a master's student in the department of Speech Pathology and Audiology at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Anniah Mupawose. I am conducting a research study about teachers' implementation of literacy learning strategies for their learners with Complex Communication Needs who are non-speaking and how they interact with them daily. The study title is **investing the literacy learning strategies implemented by teachers for learners who are non-speaking.**

I am asking permission to observe the teachers interacting with your child in the classroom during language and life skill lessons. I will be observing in the classroom how the teacher communicates with your child, how they provide opportunities to participate and how the adapt the environment to accommodate your child. The observation is solely focused on the teacher's interaction with your child and your child will not be required to do anything. The observation will take one hour to conduct. The observation will not be recorded in any way. Your child's identity will remain anonymous and will not be disclosed in the report writing.

If you agree for your child to be observed in the research study, it should be because you want to. You do not have to agree. You or your child will not get any direct benefits if you choose to join the research study. You or your child will not lose any services, benefits or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. Your will not be paid for being in this research study. This research study is not associated with any risks. Please see the consent form attached.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,

Makgetjepe Dineo Makgetloa
072 802 4973
2634210@students.wits.ac.za

Supervisor:
Dr Anniah Mupawose
011 717 4571
Anniah.Mupawose@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
1922 2022
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Mzali Othandekayo

Igama lami nginguMakgetjepe Dineo Makgetloa. Ngingumfundi we-masters emnyangweni we-Speech Pathology and Audiology eNyuvesi yaseWitwatersrand, eGoli. Umphathi wami ngu Dkt Anniah Mupawose. Ngenza ucwaningo mayelana nokusebenzisa kothisha amasu okufunda ukufunda nokubhala kubafundi babo abanezidingo Zokuxhumana Eziyinkimbinkimbi abangakhulumi kanye nendlela abaxhumana ngayo nazo nsuku zonke. Isihloko socwaningo sitshala amasu okufunda ukufunda nokubhala asetshenziswa othisha kubafundi abangakhulumi.

Ngicela imvume yokubuka othisha behlanganyela nengane yakho ekilasini ngesikhathi sokufunda ulimi nempilo. Ngizobe ngibheka ekilasini ukuthi uthisha uxhumana kanjani nengane yakho, ukuthi ikunikeza kanjani amathuba okubamba iqhaza nokuthi ishintsha kanjani indawo ukuze yamukele ingane yakho. Ukuqaphela kugxile kuphela ekusebenzelaneni kukathisha nengane yakho futhi ingane yakho ngeke kudingeke ukuthi yenze lutho. Ukuqaphela kuzothatha ihora elilodwa ukuqhutshwa. Okuphawuliwe ngeke kurekhodwe nganoma iyiphi indlela. Ubunikazi bengane yakho buzohlala bungaziwa futhi angeke budalulwe ekubhalweni kombiko.

Uma uvuma ukuthi ingane yakho ibukwe ocwaningweni locwaningo, kufanele kube ngoba uyafuna. Akudingekile ukuba uvume. Wena noma ingane yakho angeke nithole izinzuzo eziqondile uma ukhetha ukujoyina ucwaningo. Wena noma ingane yakho ngeke nilahlekelwe yinoma yimaphi amasevisi, izinzuzo noma amalungelo obungaba nawo ngokuvamile uma ninquma ukungajoyini. Ukubamba iqhaza ocwaningweni angeke kukubize lutho. Ngeke ukhokhelwe ngokuba kulolu cwaningo. Lolu cwaningo locwaningo aluhlotshaniswa nanoma yiziphi izingozi. Sicela ubheke ifomu lemvume elinamathiselwe.

Lolu cwaningo luzobhalwa njengombiko wocwaningo. Umbiko uzotholakala kusizindalwazi somtapo wolwazi wenyuvesi. Uma ungathanda ukuthola isifinyezo salo mbiko, ngizojabula ukukuthumelela wona.

Uma unanoma yimiphi imibuzo ngesikhathi noma ngemva kwalokho mayelana nalolu cwaningo, zizwe ukhululekile ukuxhumana nami noma umqondisi wami kule minininingwane ebhalwe ngezansi. Uma unokuthile okukukhathazayo noma izikhalazo mayelana nezinqubo zokuziphatha zalolucwaningo, wamukelekile ukuthintana ne-University Human Research Ethics Committee (Non-Medical), ucingo +27(0) 11 717 1408, i-imeyili hrecnon-medical@wits. ac.za.

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Appendix G: Parent consent form

Title of project: Investigating literacy learning strategies implemented by teachers for learners who are non-speaking.

Name of researcher: Makgetjepe Dineo Makgetloa

I, parent/caregiver of (name of child)……., agree for my child to be observed in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that the study does not directly involve my child but is about how my child's teacher interacts with him/her during a classroom lesson.	YES	NO
I agree that my child's participation will remain anonymous (my child's name will not be used by the researcher in their research report	YES	NO

…… (signature)
…… (name of parent)
…… (date)

…… ……(signature)
…… (name of researcher/person seeking consent)
…… (date)

Isihhoko socaningo: Investigating literacy learning strategies implemented by teachers for learners who are non-speaking.

Igama lomncwaningi: Makgetjepe Dineo Makgetloa

Mina, Umzali ka(ikama le ngane) ……., ngiyavuma ukuthi ingane yami izobhekwa kulo msebenzi wocwaningo.

Ngivumelana nalokhu okulandelayo:

(Sicela ubiyele izinketho ezifanele ngezansi)

Lolucwaningo ngichazeliwe lona. Ngiyaqonda ukuthi lolu cwaningo lumayelana nani. YEBO CHA

Ngiyaqonda ukuthi isifundo asibandakanyi ingane yami ngokuqondile kodwa simayelana nendlela uthisha wengane yami axhumana ngayo nayo phakathi nesifundo sokufundela ekilasini. YEBO CHA

Ngiyavuma ukuthi ukuhlanganyela kwengane yami kuzohlala kungaziwa (igama lami ngeke lisetshenziswe umcwaningi embikweni wakhe wocwaningo YEBO CHA

…… (isiginesha)
…… (igama lomzali)
…… (usuku)

……(isiginesha)
…… (igama lomcwaningi/umuntu ofuna imvume)
…… (usuku)

Appendix H: Semi structured interview schedule

Semi Structured interview schedule

Abbreviations:

CCN- Complex Communication Needs

AAC- Augmentative and Alternative Communication

SLT- Speech Language Therapist

Section A: Demographics

1. How long have you been a teacher?
2. How long have you been a teacher in special needs education?
3. What teaching qualification do you have? (Certificate, diploma, degree)
4. How long have you been a teacher in special needs education?
5. How long have you been teaching at this school?
6. Are you registered with any teaching council? Elaborate
7. How many learners are in your classroom?
8. How many learners have communication challenges?
9. How many facilitators are in your classroom?

Section B: Teachers' awareness about AAC and SLT

Teachers' awareness of AAC

1. What do you understand by the term CCN?
2. Are you aware of what AAC is?
3. Do you use the AAC systems during your lessons?

   3.1. If yes, when do you use them?

   3.2. If no, why not?
4. What kind of AAC systems do you have in your classroom?
5. How many learners use AAC devices?
6. Do you think you need training/assistance using AAC systems?

   6.1. Provide a reason.

Teachers' awareness of the role of a speech-language therapist

1. Do you know what an SLT is or does?
2. Do you know the role of SLTs in education?

   2.1. If yes, what do you think their role is?

   2.2. If no, is there a reason why you don't know? Example, you have never worked with them before?
3. Do you think SLTs have any role in education?
4. Do you think SLTs should be involved in education?
5. Are you receiving any support from SLTs?

   4.1. If yes, what kind of support?

   4.2. If no, what kind of support would you like?

Section C: This involves the learning strategies/accommodations you make in the classroom to accommodate learners with CCN.

1. What kind of strategies do you use to teach learners with CCN?
    - Visual cues
    - AAC devices
    - Using Makaton/ sign Language
    - Sitting placement
    - Scaffolding
    - Smaller groups facilitation
2. How do you adapt the teaching material to accommodate learners with CCN?
3. Do you use graphics/pictures to support written text?

3.1. Elaborate

4. Do you provide learners with visual schedules including activities of the day?
    4.1 if no, why not?
    4.2 If yes, why and how?
    4.3 What type of visual schedules do you use?
5. How do you monitor the learner's progress?
6. What have you done to include literacy in the classroom?
7. Do you know what phonological awareness is?
    7.1. what do you know about phonological awareness in terms of supporting literacy?
8. Do you teach the learners phonological awareness skills needed to develop literacy? Alphabet recognition and letter-sound correspondence?
    How is this facilitated?

Section D: This section involves the barriers you are experiencing in teaching these learners.

1. Describe any barriers or challenges you may experience in teaching learners with CCN?
2. How have you managed to deal or overcome these challenges?
3. Do you think you are adequately trained to teach these learners?
4. Do you think you are given enough support from the district and other professionals?
5. What kind of assistance do you feel you need?
6. What other information you feel is relevant that we haven't discussed?

Section E: This involves what methods you are using that are working.

1. What is it currently implemented that is working well with your learners?
2. What are some of your personal characteristics that have assisted you?
3. What is the school or department doing that is working?
    3.1. Parental involvement
    3.2. Professional training- Please elaborate.
    3.3. Provision of teaching material- if yes, what kind?

Appendix I: Ethics certificate



Certificate

March 27, 2023

This is to certify that Ms. Makgetjepe Makgetloa has successfully completed the Macquarie University Human Research Ethics Online Training Module for the Social Sciences and Humanities.

Macquarie University

Appendix J: Classroom observation checklist

Communication Supporting Classroom Observation Tool

2012

Developed by:

Dockrell, J. E., Bakopoulou, I., Law, J., Spencer, S. & Lindsay, G.

2023

Adapted by Makgetloa M.D

School .....

Date.....Start time.....Finish time.....

Completed by.....Class.....No of learners.....

Language Learning Environment This dimension involves the physical environment and learning context.				
		Not seen	Observed	
1	Learning topics are clearly defined throughout the classroom.			
2	Learning topics are clearly labelled with pictures/words throughout the classroom.			
3	Learners' own work is displayed and labelled appropriately.			
4	Book specific areas are available.			
5	Literacy specific areas are available.			
6	The majority of learning resources and materials are labelled with pictures/words			
7	Resources that are available for free play are easily reached by the learners or easily within their line of vision.			
8	Appropriate vocabulary for different lessons is available and within reach.			
9	19 Daily class routines with pictures are clearly outlined and visible			
10	Visual schedules are available			
11	AAC systems are available and easily accessible			
Total: /11				
Language Learning Opportunities This dimension involves the structured opportunities that are present in the classroom to support language development				
		Not seen	Observed (5 times)	
1	Learners are encouraged to participate in group activities			
2	Learners have opportunities to engage in interactive book reading facilitated by an adult (for example: asking predictive questions, joining in with repetitions, story packs etc.).			
3	Learners have opportunities to engage in structured conversations with teachers and other adults using visual aids and AAC.			
4	Learners have opportunities to engage in structured conversations with peers (Talking partners).			
5	Learners are given opportunities to use their AAC systems and allowed sufficient time to respond.			
Total: /25				
Language Learning Interactions This dimension involves the ways in which adults in the setting talk with learners				

1	Adults use learners' name, to draw attention of learners							
2	Adults get down to the child's level when interacting with them							
3	Natural gestures and some keyword signing are used in interactions with learners							
4	Adults use symbols, pictures and props (real objects) to reinforce language.							
5	Pacing: Adult uses a slow pace during conversation; give learners plenty of time to respond and take turns in interacting with them.							
6	Pausing: Adult pauses expectantly and frequently during interactions with learners to encourage their turn-taking and active participation.							
7	Confirming: Adult responds to the majority of child communication attempts by confirming understanding of the child's intentions. Adult does not ignore child's communicative bids.							
8	Imitating: Adult imitates and repeats what child says more or less exactly.							
9	Commenting: Adult comments on what is happening or what learners are doing at that time.							
10	Extending: Adult repeats what child says and adds a small amount of syntactic or semantic information.							
11	Labelling: Adult provides the labels for familiar and unfamiliar actions, objects, or abstractions (e.g. feelings).							
12	Adult encourages learners to participate in conversations.							
13	Open questioning: The adult asks open-ended questions that extend learners' thinking (what, where, when, how & why questions) using AAC systems.							
14	Scripting: The adult provides a routine to the child for representing an activity (e.g. First, you go up to the counter. Then you say "I want milk..") and engages the child in known routines (e.g. "Now it is time for circle time. What do we do first?") with visuals.							

15	Adult provides learners with choices (for example: “Would you like to read a story or play with toys?”).							
16	Adult repair communication breakdown							
17	Adult models language that the learners are not using yet on the AAC systems.							
18	Turn-taking is encouraged.							
19	Learners initiate interactions.							
20	Learners’ non-verbal communication is praised							