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Creating a Dyslexia-Friendly Classroom: Evaluation of Foundation-Phase Teacher Training on Literacy Learning in South Africa

by

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A research report in the fulfilment of the requirements of the degree of Master in Speech Pathology at the University of the Witwatersrand.

Declaration

I, Geraldine Ann Rowell, declare that the work presented in this thesis is my own, unless otherwise indicated (in which cases sources have been acknowledged). It is submitted for the degree of Masters of Arts in Speech Pathology at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination to any other University.

Signature:  Date: 22 September 2024

Dedication and Acknowledgements

I dedicate this research to the teachers of South Africa and the learners they inspire. As a child, reading sparked my imagination and took me on journeys to different places and times. If this work helps even one more learner experience the comfort and companionship that books gave me, I will consider this project a success.

I also dedicate this research report in loving memory of my mother, Brenda Merle Rowell (née Jarman). Her unwavering work ethic and moral compass is something I will always strive to uphold.

I wish to thank:

a) My supervisor, Dr. Anniah Mupawose for her patience, assistance and guidance throughout this research project.
b) The participants: thank you for participating in this study. Your commitment to the learners will continue to resonate with me.
c) The person who encouraged me to begin this research journey: you are the reason I could dream big.
d) My mother Brenda Rowell, my father Kenneth Rowell, and brother Andrew Rowell for their loving encouragement and belief in me throughout the course of my studies.

Abstract

Literacy levels in South Africa are shockingly low as measured on multiple international benchmark assessments. However, speech-language therapists (SLTs) have the skills to assess and target such literacy difficulties. Currently, there are limited studies demonstrating the effect of dyslexia-friendly classrooms in South Africa. Consequently, this study examined the effectiveness of teachers utilising literacy strategies in an under-resourced primary school in South Africa to make their classroom learning dyslexia-friendly and neurodiversity-affirming. The study involved a participatory action research (PAR) design underpinned by a mixed methods approach. Seven foundation-phase teachers from an under-resourced, mainstream private school in a peri-urban area of Johannesburg were recruited. Data was collected and triangulated via pre- and post-workshop surveys, focus group interviews, and classroom observations. The main aim of the study was to examine the effectiveness of teacher training on how to design a dyslexia-friendly classroom that incorporates literacy strategies into their instructional practices. The four sub-aims of the study included: 1) describing the participants' change in knowledge surrounding literacy and language-based learning difficulties following two CPD workshops; 2) describing the strategies that the participants did use to create a dyslexia-friendly classroom; 3) describing the challenges to creating a dyslexia-friendly classroom ; and 4) to describe the participants' perceptions on the role of the speech-language therapist (SLT) in supporting teachers during literacy instruction. The key findings of the study revealed inconsistent benefits from the teacher training, along with significant challenges in establishing a dyslexia-friendly classroom. The analysis methods used included 1) content analysis to examine responses to the open-ended survey questions and to compare these with the classroom observation checklist; 2) thematic analysis to analyse the data from the focus groups; and 3) descriptive statistics were used to analyse the classroom observation checklist as well as the responses to the open- and close-ended questions and Likert-type scales from the

surveys. The results of the study hold potential as the participants' perceptions of their knowledge and skills related to literacy strategies and implementing a dyslexia-friendly approach improved following the CPD workshops. Multimodal instruction, structured literacy, and the universal design for learning (UDL) are recommended as approaches to be further investigated in the context of the South African classroom. This study adds to the body of research exploring the most efficient and effective way to address the low literacy levels in South Africa.

Keywords: ***continued professional development; dyslexia; inclusive education; literacy instruction; neurodiversity; speech and language therapists***

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Chapter 1: Introduction

In 2021, the Progress in International Literacy Study (PIRLS) found that 81% of South African Grade 4 learners cannot read for meaning (Mullis et al., 2021). To address the high illiteracy levels in South Africa, it is important that language-based barriers to learning and development, including dyslexia, are addressed as one in ten learners are likely to be diagnosed with dyslexia (British Dyslexia Association, 2019). Dyslexia assessment and intervention requires a multidisciplinary approach (Geertsema & Le Roux, 2020; Handler et al., 2011), and schools require ongoing support from external stakeholders to establish inclusive schools (Engelbrecht et al., 2015). Speech-language therapists (SLTs) can and should support teachers of children with dyslexia (Geertsema & Le Roux, 2020).

Many research studies conducted in South Africa over the past several years have called for further teacher training with regards to both dyslexia and literacy instruction (Leseyane et al., 2018; Makgato et al., 2022; Matlebjane, 2021; Meiklejohn et al., 2021; Mkhwanazi, 2018; Ugwuanyi et al., 2020; Thompson, 2013; van Staden, 2016). South African teachers have reported that they lack sufficient knowledge in identifying and working with dyslexic learners (Leseyane et al., 2018; Matlebjane, 2021; Nkomo et al., 2021; Ugwuanyi et al., 2020). Furthermore, teachers feel that they are not sufficiently supported by their schools (Leseyane, 2018; Matlebjane, 2021; Nkambule & Amsterdam, 2018; Nkomo et al., 2021; Ugwuanyi et al., 2020). However, there are limited studies demonstrating the effect of providing teachers with practical strategies to support learners with dyslexia. The use of multisensory strategies, defined as the use of more than one sense simultaneously, has been outlined in the literature as a way for educators to accommodate all forms of diversity in the classroom (Clouder et al., 2020; Pace et al., 2019). This study focused on the effectiveness of teachers utilising literacy strategies in an under-resourced primary school in South Africa to make their classroom dyslexia-friendly. A dyslexia-friendly approach proposes that by improving the learning

environment for children with dyslexia, the possibilities for learning will be improved not just for learners with dyslexia, but for all learners (Alnaim, 2023; Pavey, 2007). Schools that adopt such an approach display a commitment to respect and support learners with dyslexia by applying the knowledge known about dyslexia in the classroom setting (Pavey, 2007). The dyslexia-friendly approach has parallels with inclusive education and neurodiversity-affirming approaches. Consequently, the researcher designed two teacher training workshops that focused on the theoretical background of literacy development and the practical application of multisensory strategies when teaching literacy skills.

This study recruited foundation-phase teachers from an under-resourced, mainstream private school in a peri-urban area of Johannesburg. The study involved two teacher-training workshops, pre- and post-workshop surveys, classroom observations, and two focus groups. This study was undergirded by two theories of adult learning (as the participants were teachers): the theory of andragogy and the gradual release of responsibility model (GRR). The active view of reading model also underpinned the research as this framework formed the basis for the content of the teacher training workshops. The GRR model was included in the content of the workshops as this model does not only apply to adult learning but was initially used in reading instruction at its conception (Collet, 2015). Clark (2014) noted that GRR is a natural fit for teacher training.

The purpose of the study was to describe the effectiveness of teacher training on how to set up a dyslexia-friendly classroom. The significance of this study is rooted in the National Development Plan (NDP), which has nine focal points that aim to be addressed by 2030 (National Planning Commission, 2011). This study addresses two of the focal points, namely, improving education and training, and ensuring quality healthcare. As dyslexia is a neurodevelopmental disorder that affects literacy development (i.e. it is neurological in nature and has genetic factors, with onset in childhood persisting through the lifespan) (Hammill &

Allen, 2020), it falls under both the goals for education and health. The NDP has also outlined that attention should be given to the continuing development of teachers to improve the quality of education in South Africa as one of its nine tenets (National Planning Commission, 2011). To reach the most learners, in the most effective way, inclusive classrooms and dyslexia-friendly classrooms have been suggested in the literature as a viable way forward as these approaches will aid not only children with barriers to learning, such as dyslexia, but all learners (Clouder et al., 2020; Kennedy et al., 2018; Pace et al., 2019; Rose, 2009; van Staden & Purcell, 2016). The NDP states that access to enhanced education and gainful employment for people with disabilities, in this case barriers to learning and development, must be a priority (National Planning Commission, 2011). As outlined in the NDP, services for vulnerable groups including children and people living with disabilities require sound state and community intervention (National Planning Commission, 2011).

In relation to the profession of speech and language therapy, SLTs are well positioned to work collaboratively with teachers because they are trained as language-literacy specialists. The number of SLTs and audiologists required by 2030 as set out by the Agenda for Sustainable Development will not be attainable (Pillay et al., 2020). Therefore, more efficient ways of facilitating learning and reaching more learners with dyslexia and literacy difficulties must be used. Hence, training teachers in the design of dyslexia-friendly classrooms and the use of multisensory approaches is a low-cost and low-resource option.

Initially, this study aimed to explore effective classroom interventions for learners with dyslexia. However, as the research progressed, it became evident that the identification and assessment of dyslexia in South Africa are inconsistent (Leseyane et al., 2018; Matlebjane, 2021; Nkomo et al., 2021; Ugwuanyi et al., 2020).. Teachers' ability to recognise dyslexia varied widely, and there were significant inequalities in access to assessment services. Additionally, the methods used by professionals internationally, such as educational

psychologists, to assess and diagnose dyslexia lacked uniformity (Sadusky, et al., 2021). Given South Africa's high illiteracy rates and the fact that dyslexia-friendly and neurodiversity-affirming approaches can benefit all learners, not just those who have learning difficulties, the researcher shifted focus to investigate how these approaches might offer a broader solution to the country's literacy challenges.

Chapter 2: Literature Review

This literature review will provide background and context to the topic under investigation and it will further discuss the key variables. It will also provide the theoretical frameworks that undergird the study. Finally, a rationale for the study is presented.

To address the high illiteracy levels in South Africa, it is important that language-based barriers to learning and development, including dyslexia, are addressed because one in ten learners are likely to be diagnosed with dyslexia globally (British Dyslexia Association, 2019). There is no agreed upon definition of dyslexia as it is multifaceted in terms of its causes, while also occurring along a continuum (Rose, 2009). Therefore, it is important that researchers investigate the practical applications of well-researched classroom interventions to move away from debates occurring only within the academic literature towards the application of evidence-based practices that will result in meaningful outcomes for the most learners. Dyslexia assessment and intervention requires a multidisciplinary approach (Geertsema & Le Roux, 2020; Handler et al., 2011) and schools require ongoing support from external stakeholders to establish inclusive learning environments (Thompson, 2013). Accordingly, SLTs can and should support teachers of children with dyslexia (Geertsema & Le Roux, 2020).

Dyslexia is a language-based barrier to learning and development (Handler et al., 2011). Language-based barriers to learning and development include difficulties in reading, writing, and spelling that are not expected for the child's age (ASHA, 2015). Unfortunately, in the case of developmental dyslexia, the consensus around its definition is still lacking, even after decades of discussion within the literature (Hammill & Allen, 2020). Although there is a general agreement on what dyslexia is (that it is a difficulty in reading), agreement on the operational definition of dyslexia is still lacking (Delany, 2017; Lopes et al., 2020; Meteyard & Gilmore, 2015; Sadusky et al., 2022). Along with the many definitions available to practitioners, terminology is also lacking in consensus (Mather & Wendling, 2011). Reading

disorder, specific learning disorder, and dyslexia are used interchangeably in the literature (Lopes et al., 2020; Mather & Wendling, 2011).

Learners with dyslexia have difficulties with literacy, where literacy refers to reading and writing skills (ASHA, n.d.). Literacy skills are the foundation of learning (United Nations Educational, Scientific and Cultural Organisation, 2005) and literacy is not an innate ability. Rather, it must be taught and is influenced by the home environment and by the larger social context (Adlof, 2020; Moonsamy & Carolus, 2019).

Background

The inequalities facing South Africa as a whole, including in the education sector, are a direct result of Apartheid (Abrahams et al., 2019; Meiklejohn et al., 2021). During the Apartheid era, Bantu education was characterised by a lack of resources and poor infrastructure to restrict non-white learners' education to ensure that they remained poor (Abrahams et al., 2019) while ensuring the maintenance of a sense of superiority for white people (Thompson, 2013). In the era following Apartheid, teachers struggled to implement a new curriculum. Teacher support has been identified as crucial to address the challenges brought on by a new education system and the changes in curriculums (Engelbrecht et al., 2015; Nkambule & Amsterdam, 2018; Thompson, 2013). Large classes, a lack of resources, insufficient facilities, and being under-trained are some of the challenges that South African teachers still face following Apartheid (Engelbrecht et al., 2015). Following the discussion on the ongoing impact of Apartheid on South Africa's education system, it is crucial to examine how the South African government has sought to address these historical injustices. The next section explores these efforts through the lens of inclusive education.

Inclusive Education

The Special Needs Education White Paper 6 (Department of Education [DoE], 2001) was accepted in 2001 as a way to ensure that inclusive education is implemented in South Africa (Engelbrecht et al., 2015; Leseyane et al., 2018; Matlebjane, 2021; Thompson, 2013. Inclusive education refers to the provision of quality education for all learners, including those with barriers to learning and development (Engelbrecht et al., 2015; Ugwuanyi et al., 2020). Such learners may have previously been taught in a different special education system because of barriers to learning and development, but they are now taught in a mainstream classroom (Makgato et al., 2022). Here, mainstream refers to ‘regular’ or ‘ordinary’ classrooms or schools, as opposed to special needs schools (Thompson, 2013).

The White Paper 6 outlined the government's proposal to provide a supportive and inclusive learning environment for all learners (Leseyane et al., 2018). However, Leseyane et al. (2018) found that the needs of learners with barriers to learning and development are not being met in the mainstream public school system. Lack of clarity in the policy and implementation challenges were cited as main reasons for this under-provision (Leseyane et al., 2018).

The largest challenge of implementing inclusive education in state-owned schools in South Africa is a lack of funding (Thompson, 2013). The effects of poverty still cause obstructions to create truly inclusive school environments. There are additional challenges that poor children with disabilities must deal with, for example, assistive technologies are out of reach for such children (Thompson, 2013). This excludes children with disabilities from learning opportunities and alternative ways to demonstrate their knowledge and skills, which goes against the philosophy of inclusive education. An inclusive curriculum will remove possible barriers to learners’ academic achievements (Clouder et al., 2020).

Inclusive education requires that teachers move away from a ‘one size fits all’ approach to a more individualised method of teaching and learning; and it requires that educational spaces be set up to accommodate all learners (Lindner & Schwab, 2020). As schools attempt to implement inclusive education, teacher training has been outlined as paramount within South African studies (Makgato et al., 2022). Having discussed inclusive education within the South African context, the following section examines how a neurodiversity-affirming approach aligns with the principles of inclusion.

Neurodiversity-Affirming Approaches

Neurodiversity refers to the concept that neurological differences are part of normal variances among humans and that these differences have strengths that offer value to society (Rentenbach et al., 2017). In other words, brains that are wired differently offer unique positions to provide solutions to problems that others may not be able to see. Consequently, neurodiversity activists argue for the necessity of neurodiversity in order for humans to survive and thrive (Rentenbach et al., 2017).

The term neurodiversity originates from the autism rights movement and was coined by Judy Singer in 1998. The term encompasses neurodivergent people (with neurocognitive functioning that differs from the norm) and neurotypical people (with neurocognitive functioning that is within the ‘socially acceptable’ range) (Kapp, 2020). Neurodivergent ‘conditions’ include attention deficit hyperactivity disorder (ADHD), autism, and dyslexia, amongst others (Rentenbach et al., 2017). Neurodivergent individuals often face unique challenges in traditional educational settings, which highlights the need for more inclusive frameworks like the universal design for learning (UDL). The principles of UDL are rooted in a neurodiversity-affirming approach (Brandsen et al., 2024). The UDL and neuro-affirming approaches will benefit all learners, not only learners who battle (Brandsen et al., 2024; Clouder

et al., 2020; Pace et al., 2019). Such an approach has parallels with a dyslexia-friendly approach as it is rooted in a neurodiversity-affirming approach.

The UDL is a framework that promotes inclusive education by guiding educators in supporting learners with diverse needs in the classroom (Kennedy et al., 2018). It was first described by the Centre for Applied Special Technology (CAST) in 1998, initially regarding architecture (Dalton, et al., 2012; Kennedy, et al., 2018). This approach to teaching highlights flexibility in terms of goals, methods, assessments and materials (CAST, 2011; Ndlovu, 2020).

The goals for the learners remain the same, but the path of achieving those goals is modified for each learner (Lindner & Schwab, 2020). It has already been identified that allied health professionals, such as occupational therapists and speech-language therapists, have a role to play in providing services within a UDL framework in a school setting (Kennedy et al., 2018). Having discussed neurodiversity-affirming approaches, it is important to examine how the Department of Basic Education has responded to South Africa's poor literacy levels. The next section focuses on the national literacy campaign as a response to this challenge.

National Literacy Campaign

In response to the Early Grade Reading Study findings in 2019, the South African government began implementing the National Reading Plan by providing support packages for teachers, including professional development and grade-appropriate reading materials in African languages. Then-Minister of Basic Education, Angie Motshekga, opened the National Seminar on Reading Literacy on 16 May 2023 and reported on the disappointing results of the Progress in International Literacy Study (PIRLS) 2021 and introduced the Revised National Reading Plan. The PIRLS assessments are administered to Grade 4 learners every five years (Govender & Hugo, 2020). The minister ascribed South Africa’s poor performance on the

PIRLS to the COVID-19 pandemic (discussed further below), which caused considerable disruptions to learning due to prolonged school closures.

Minister Motshekga noted that the Revised National Reading Plan was nearing completion. However, her speech faced criticism from literacy development experts. Clark (2023), a remedial teacher and occupational therapist, countered the minister's claim that there was insufficient research on effective reading interventions. That author pointed out decades of international research on reading interventions exists and argued that local research over the past decade also provides evidence for effective practices. The author responded that structured literacy (SL) would be a cost-effective and low-resource approach to follow, which is pertinent to the context of South Africa where many districts, schools, and households fall below the poverty line.

SL, a systematic and explicit approach to literacy instruction, has been identified as a beneficial method for learners with barriers to learning (International Dyslexia Association [IDA], 2019). The researcher proposes that SL could be used as a literacy-specific approach within a dyslexia-friendly and neurodiversity-affirming classroom. Training teachers in an SL approach is a viable way forward to assist learners who battle with literacy. Although SL is not discussed in depth in this research report, the principles of SL were drawn upon when the researcher designed the continuing professional development (CPD) workshops, and is recommended as a future direction for teachers to receive training in.

The COVID-19 Pandemic

Ardington et al. (2021) reviewed three longitudinal studies conducted with Grade 2 and Grade 4 learners in no-fees schools before and after the national lock down in 2020 due to the COVID-19 pandemic. The researchers found that learners were dropping out of school at increased rates and there were higher rates of absenteeism noted between pre-COVID and post-COVID years. Girls and children with initially stronger reading proficiency were more

negatively impacted by school closures. Additionally, learning losses disproportionately affected weaker learners. The researchers concluded that those learners who are behind, will continue to learn less each year and that differences between developed and developing countries will exacerbate the learning inequalities between these types of countries.

The Department of Education (DoE) proposed a three-year curriculum recovery plan entailing trimming the 2020 and 2021 curriculum, by focusing on the teaching of core curriculum content and reducing assessment requirements (Ardington et al., 2021). However, this depends on the agility of a large public school system and the ability of teachers to adapt (Ardington et al., 2021). Factors such as loss of income, rising hunger, and the impacts of the pandemic on children's socio-emotional well-being will also impact learning adversely (Ardington et al., 2021).

Manase (2021) found that a lack of resources and supportive living conditions disadvantaged some university students from accessing education during online learning in the COVID-19 pandemic. Students with learning disabilities were at an increased risk for further exclusions and mental health difficulties; however, these students engaged better with online and remote learning despite having to overcome these barriers (Manase, 2021). Online learning should be investigated as a potential avenue for dyslexic learners, which is supported by recent local research involving university students (Manase, 2021). Some studies conducted in developed countries have observed the negative effects of the COVID-19 pandemic on young dyslexic learners and their families (Baschenis et al., 2021; Soriano-Ferrer et al., 2021). Panagouli et al. (2021) conducted a review of 42 studies including qualitative, quantitative, and mixed methods; the authors examined the impact of online learning on school-aged learners during the COVID-19 pandemic. Most of the studies were conducted in Europe, America, and Asia, with only two based in Africa and one in Oceania. The review revealed varied outcomes: while many students experienced learning losses, some benefited from distance learning.

Younger learners, students with neurodevelopmental disorders, and those in special education were disproportionately affected, experiencing the most learning losses. Parents reported mixed experiences, with some observing setbacks in their children's learning and others noting improvements. Teachers highlighted gaps in mathematics and reading achievement compared to typical years. Socioeconomic factors played a significant role in access to online learning, affecting performance of students in all grades, especially in lower income communities. Soriano-Ferrer et al. (2021) conducted a qualitative study in Spain using questionnaires to explore the experiences of dyslexic learners and their mothers during the COVID-19 quarantine. The study found that children with dyslexia exhibited symptoms of depression and anxiety during this period. Parents reported observing heightened emotional difficulties, including attention and hyperactivity challenges, as well as conduct problems. Many parents also struggled to establish consistent study routines and noted that the quarantine negatively impacted their child's learning. Additionally, parents experienced increased stress levels compared to pre-pandemic times. However, there have not been similar studies conducted within the South African context.

Argument

Academic learning, economic development, and economic stability are dependent on basic literacy skills (Govender & Hugo, 2020). The researcher argues that teachers in South Africa should receive explicit instruction in the implementation of dyslexia-friendly practices (including the use of multimodal strategies) in South African classrooms to support all learners (both typically developing and neurodiverse learners). The following are cited as reasons: (i) low levels of literacy in South Africa; (ii) SLTs should support teachers; (iii) shortage of SLTs; (iv) lack of teacher training; and (v) dyslexia-friendly classrooms are inclusive classrooms and can assist all learners, not just learners who battle.

Literacy Levels in South Africa

Concerningly low literacy levels in developing countries such as South Africa have been identified throughout the literature. Many international and national benchmark assessments of literacy skills frequently place South African childhood literacy at well below levels expected for individuals to function in the economy or society as a whole (Conn, 2017; Meiklejohn et al., 2021; Moonsamy & Carolus, 2019; Spaull et al., 2020). Seminal author Stanovich (1991, as cited in Snowling et al., 2020) argued that children who are good at reading develop better language skills compared to those who have difficulties in reading. Therefore, children who are good at reading have a better opportunity to learn via print compared to children who battle with reading. This is known as the 'Matthew effect' and refers to the effect of early reading skills on later reading and cognitive development, that is, the rich get rich and the poor get poorer (Reschly, 2010). In other words, learners who are good at reading continue to improve, while learners who struggle with reading not only continue to struggle academically, but the gap between those learners and learners who are good readers continues to widen as they progress through higher grades in school. The researcher proposes that training teachers in the use of literacy strategies during literacy instruction within a dyslexia-friendly classroom will facilitate learning to reduce the Matthew effect currently seen in the education system.

An investigation of national primary school literacy interventions conducted between 2005 and 2020 by Meiklejohn et al. (2021) concluded that literacy intervention programmes in South Africa have been improvised, uncoordinated, and have not yielded change within the larger system of education. The interventions analysed were described as 'ad hoc' as there are few large-scale literacy intervention programmes conducted over longer periods of time, or programmes that are coordinated between provinces. Meiklejohn et al. (2021) state that basic literacy interventions should take place in the foundation phase, teacher professional

development is needed, and classroom-based interventions for a duration of two years are required for any impact to occur. They further recommended that more in-depth and interactive instruction is necessary and teachers require coaching in the skills to teach effectively. Further, literacy teaching should be built into content subjects and information and communication technology (ICT) can support the development of literacy (Meiklejohn et al., 2021). Meiklejohn et al. (2021) concluded that successful interventions need to include teacher professional development and appropriate teaching approaches and pedagogies. This is reflected in other studies such as by Conn (2017), who found that changes in instructional methods are more effective than other programmes.

The Role of Speech-Language Therapists (SLTs)

Abrahams et al. (2019) demonstrated how coloniality and Apartheid has shaped South African SLTs' knowledge and practices. The profession was initially rooted within the medical model that focuses on how to 'fix' the disorder in the individual (Abrahams et al., 2019). This is a deficit model that places the individual as the focus of intervention rather than seeing the disability within the larger system that the individual exists in (for example, the education system). The therapist was placed as the 'expert' who determined the presence of a disorder and the focus of therapy, and who characterised a disorder in a binary approach according to normative criteria. Normative frames are rooted in Eurocentric knowledge, thus this knowledge has disempowered Africa and its people. Similarly, Engelbrecht et al. (2015) found that teachers' pre-service training with regards to barriers to learning was rooted in the medical-model and deficit-based approach, viewing learners' difficulties as intrinsic. This influences the way that South African teachers are able to implement inclusive practices within their classrooms.

Currently, due to a lack of culturally and linguistically diverse practitioners and tools, SLTs serve a privileged minority, and the majority of South Africans still have limited access

to resources. The researcher concurs with Abrahams et al. (2019) that the profession of SLTs in its current form perpetuates injustice. Abrahams et al. (2019) further proposed the equitable population innovations for communication framework (EPIC), which argues for population-based service provision over the traditional one-on-one model. Focus should be shifted from the individual to the community (in this case, teachers) to meet the needs of the underserved population in South Africa. Thus, the researcher, in aligning with the tenets of EPIC, designed an intervention based on current literature pertaining to literacy development and the use of multimodal strategies to train teachers to make their classrooms dyslexia-friendly. In training teachers, the researcher concurs with Abrahams et al. (2019) that more learners with dyslexia can be reached using this approach versus the traditional one-on-one or direct service delivery model. Other researchers such as Wium et al. (2010) have also stated that school-based SLTs should be supporting educators, not only individual learners.

Geertsema and Le Roux (2020) recently investigated the assessment and intervention practices of SLTs in South Africa. Disappointingly, the results found that the majority of South African SLTs are not confident in managing dyslexia. The South African SLTs that did assess for dyslexia all included phonemic awareness, phonological awareness, and auditory processing in their skills assessment. The majority of South African SLTs included phoneme-grapheme association, letter name knowledge, word attack skills, vocabulary, spelling, and reading comprehension in their assessment battery. The least targeted areas were sight word recognition, reading speed, reading accuracy, reading speed, and narrative writing. The findings of Geerstema and le Roux (2020) indicated that South African SLTs do assess the areas affected by dyslexia. These areas are crucial to learning and becoming literate. The study aimed to demonstrate that SLTs do have the knowledge and skills to manage dyslexia and to support teachers during literacy instruction. Consequently, the teacher training workshops in this study were designed by an SLT.

The literature has identified that SLTs can and should be involved with the management of learners with dyslexia and/or other barriers to learning and development (Colenbrander et al., 2018; Geerstema & le Roux, 2020; Makgato et al., 2022). According to the Health Professions Council of South Africa (HPCSA), SLTs have a role in addressing language comprehension and language expression including phonology, morphology, syntax, semantics, pragmatics, and literacy (reading, writing, spelling) (Health Professions Council of South Africa [HPCSA], 2017). The literature has also outlined that teachers and therapists should work collaboratively (Dalton et al., 2012; Lindner & Schwab, 2020; Wium et al., 2010) and that SLTs have specific skills relating to communication and language that have them well poised to support teachers to facilitate listening, speaking, reading, and writing (Wium et al., 2010).

Wium et al. (2010) conducted a longitudinal study over two years looking at the gains made in knowledge, skills, and confidence of ninety-six foundation-phase teachers from two different under-resourced areas (semi-rural and township) following a literacy and numeracy training programme. A mixed-methods design was utilised where quantitative data were transformed into quantitative data via concurrent, equal status triangulation. Self-constructed questionnaires were administered pre and post the workshops; attendance registers and assignments were also used to generate quantitative data. Focus groups and a research journal were utilised to capture qualitative data. The results demonstrated that such a programme provided by SLTs yielded varying results, with some teachers benefitting more than others from the programme. Wium et al. (2010) recommended that more homogenous groups be selected in future studies. Thus, this research aimed to add to the body of literature with regards to effective in-service training of foundation-phase teachers in South Africa.

Shortage of SLTs

Inequities in terms of access and service delivery currently continue in South Africa (Mophosho, 2018). There is already a documented shortage of SLTs in South Africa, and the country will likely have a critical shortfall of audiologists and SLTs by 2030. Consequently, South Africa will not meet the requirements for the 2030 Agenda for Sustainable Development (Pillay et al., 2020). The public sector caters for 84% of the population and this inequity is further worsened by the unequal access between rural and urban public sectors. However, 22% of the SLT/audiologist workforce are employed in the public sector. Pillay et al. (2020) calculated the 'gold standard' for the SLT workforce based on the HPCSA service delivery guidelines as 43 SLTs per one million population. Combined, there are currently 0.57 SLTs, audiologists, and dual-registered SLTs and audiologists per 10,000 population (Pillay et al., 2020). This study aimed to build on the EPIC model proposed by Abrahams et al. (2019) to meet the needs of the underserved population in South Africa by focusing on population-based service provision to serve more learners.

Lack of Teacher Training in Special Needs Education

Researchers in South Africa have found that both primary school and high school teachers felt that they had either received little or no pre-service training in dyslexia (Makgato et al., 2022; Masalesa et al., 2019; Thompson, 2013). Thus, inclusion of special needs education in teacher training facilities has been called for (Thompson, 2013; Makgato et al., 2022) as well as continuous professional development of teachers when they are in-service (Masalesa et al., 2019; Matlebjane, 2021).

Dyslexia-Friendly Classrooms are Inclusive Classrooms and Can Help All Learners

A dyslexia-friendly classroom is a neurodiversity-affirming and inclusive classroom. However, the link between dyslexia-friendly and neurodiversity-affirming practices has not

been explicitly stated in the literature, yet the parallels are obvious. Dyslexia-friendly practice is a framework that promotes inclusive education by guiding educators in supporting learners with diverse needs in the classroom (Pace et al., 2019), Multisensory (more recently referred to as ‘multimodal’) approaches are a major element of dyslexia-friendly classrooms (Reid, 2011; Rontou, 2021).

A study conducted in Saudi Arabia by Alnaim (2023), found that teachers had mostly positive perceptions about implementing dyslexia-friendly classrooms, despite some challenges. However, it is important to note that Alnaim's (2023) study was conducted in Saudi Arabia, a developed country with presumably more resources available to address the contextual challenges teachers may face when creating dyslexia-friendly classrooms. The current study investigated the applicability of dyslexia-frinedly classrooms within a South African context.

In the current study, the term ‘multisensory’ was used throughout the surveys and workshop materials, but was used synonymously with ‘multimodal’, in line with the most recent literature. In an inclusive environment, the goals for the learners remain the same, but the path of achieving those goals is modified for each learner (Lindner & Schwab, 2020). Thus, an inclusive culture supports a dyslexia-friendly classroom (Mortimore & Dupree, 2008). It has already been identified that allied health professionals, such as SLTs, have a role to play in providing services within an inclusive framework in a school setting (Kathard et al., 2011; Wium et al., 2010). The researcher designed CPD workshops that incorporated a theoretical component (including the role of the SLT and skills needed in literacy development) and a practical component (demonstrating multimodal strategies to use during literacy instruction).

The study also aimed to contribute to the limited research investigating the implementation of dyslexia-friendly classrooms to aid reading skills in primary schools in South Africa. Further, it aimed to understand how the participants perceived the effectiveness

of the CPD workshops on dyslexia-friendly classrooms. In agreement with the claim of Matlebjane (2021), the researcher postulates that a dyslexia-friendly approach could be the most effective approach to apply in the South African context due to its flexibility, low cost, and its potential to benefit every learner.

Conceptual Framework

The conceptual framework of this study is undergirded by two theories of adult learning as the participants of the study were teachers. These are Knowles' theory of andragogy and Pearson and Gallagher's gradual release of responsibility (GRR) model. Duke and Cartwright's active view of reading model also underpinned the study because the theory formed the basis for the content of the teacher training workshops.

Andragogy

The theory of andragogy was conceptualised in the 1820s by Alexander Kapp and popularised in the 1960s by Andrew Knowles (Mews, 2020). Andragogy in practice has three dimensions, namely, goals and purposes for learning, individual and situational differences, and the core principles of adult learning (Knowles et al., 2014). The three domains interact with each other. Thus, the framework recognises the heterogeneity of learners and learning situations, and recognises that learning is interactional and multifactorial (Knowles et al., 2014). The goals and purposes for learning are the outcomes that will be used to shape the learning experience and can be categorised into individual, institutional or societal growth. Individual and situational differences are the variables that will impact adult learning and can be categorised into subject-matter differences (i.e. different content may require different strategies for learning), situational differences (i.e. how the situation influences learning), and individual differences (i.e. how the characteristics within the individual influence learning). Knowles et al. (2014) state that andragogy is underpinned by six principles:

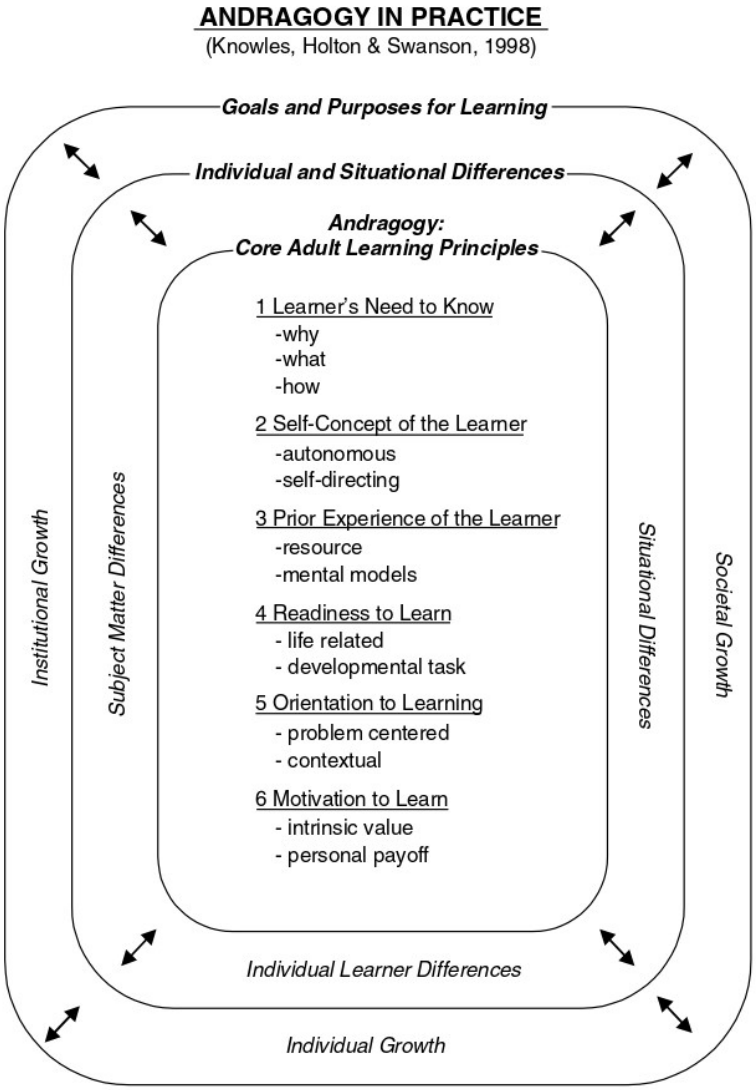
1) Learners' 'need to know': Before adults undertake learning something, they need to know why they need to learn. Thus, the first task of the facilitator is to make adult learners aware of the 'need to know'. Real or simulated experiences that help the adult learners discover the gap between where they currently are and where they would like to be are powerful methods.
2) Learners' self-concept: Adults see themselves as being responsible for their own decisions, and they have a need for others to view them as capable of self-direction. This means that adult learners resist situations where others impose their wills onto them. So, when adults attend a training event or professional development workshop, they may defer back to a dependent learning style of the childhood classroom. The goal of adult education should be directing adult learners from being dependent learners to self-directed learners.
3) Learners' prior experience: For any group of adult learners, there will be heterogeneity in terms of background, motivation, interests, and goals. Thus, there is a greater need for the individualisation of learning and teaching strategies for adult learners. Simply because adult learners have lived longer, they have a wealth of experiences to tap into. Experiential techniques such as group discussions, simulations, and case studies allow adult learners to tap into their own experiences. However, by virtue of being more experienced, there is an increased possibility of being more closed minded to new ideas or alternative perspectives.
4) Readiness to learn: Real-life situations require an adult to learn the things that they need to know in order to cope effectively with a given situation.
5) Orientation to learning: Adults are task- or problem-centred. If they perceive that learning something will help them in their everyday lives to perform tasks or resolve problems, they will be motivated to learn that new something. New knowledge, skills,

and attitudes are learned most effectively when adult learners can apply them directly to their own lives.

6) Motivation to learn: While adults are motivated by external factors (e.g. better job opportunities, higher salaries), they are more motivated by internal pressures (e.g. higher self-esteem, quality of life).

Figure 1

The Andragogy Framework



Note. Conceptualised by Knowles et al. (2014, p. 149).

The above principles were applied when designing the curricula of the CPD workshops. Novitasari and Sugito (2018) conducted a study that found that an andragogy-based teaching process can improve learning activities and the creation of lesson plans for early childhood educators in Indonesia. The authors also stated that adult training should position the adult learners as valuable adults, should provide the adult learners with the required materials, and

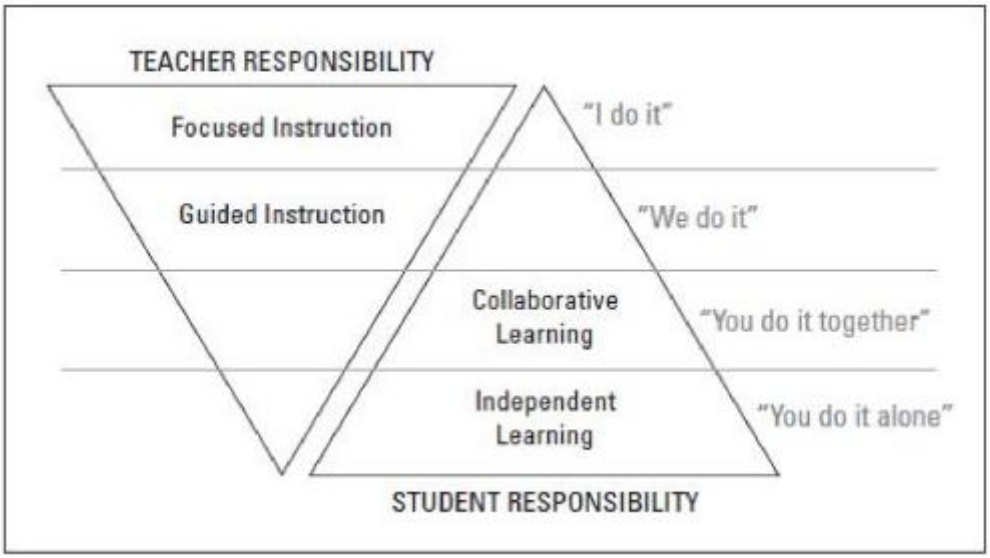
that the adult learners should be active participants in every stage of the training activities. These recommendations were followed when designing the CPD workshops.

Gradual Release of Responsibility Model

Pearson and Gallagher developed the GRR model as a model of learning in 1983, influenced by the work of Vygotsky's (1978) zone of proximal development as well as Wood, Bruner and Ross' (1976) concept of scaffolding (Webb et al., 2019). Instruction moves from explicit instruction to guided practice, gradually fading out the need for the teachers' direct instruction, allowing learners to become independent (Collet, 2015). Initially, this model was used as a framework for reading comprehension and has been added to and applied to all spheres of instruction in education as well as in the teacher training sphere (Collet, 2015). The GRR model posits that learning is supported through collaboration with others, is learner centred (May, 2010), and is not linear because learners move back and forth between stages as they master a concept (Webb et al., 2019). May (2010) summarises the four-stage model: the first stage is where the teacher takes complete responsibility for a learning task by providing a model of what is expected. In the second and third stages, the teacher and learner assume joint responsibility for the learning task and engage in guided learning. The teacher initially assumes more responsibility for the learning task but gradually guides the learner to assume more responsibility for the learning task through the use of questions, suggestions, and cues. In the fourth stage, the learner independently practises and applies what has been learned. This is diagrammed in Figure 2. The GRR model was utilised to develop the participants' skills within the CPD workshops and was also provided as a strategy in the workshops for the participants to understand how to implement scaffolding and guided support during their literacy lessons.

Figure 2

Fisher and Frey's (2014) Version of the GRR Model



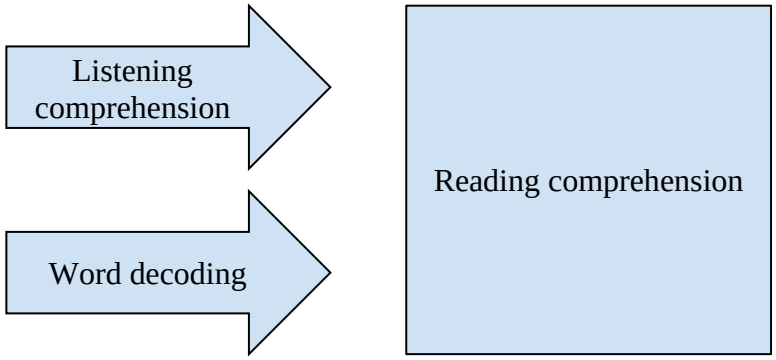
Note. From Pearson et al. (2019, p. 17).

Reading Acquisition Models

The two models of reading acquisition that are most often researched and cited in the literature are the simple view of reading framework (SVR) and the reading rope model. The SVR was proposed by Gough and Tunmer in 1986, and states that reading comprehension is a result of word decoding (fast and accurate word recognition) and listening comprehension (language processes) (Nation, 2019). Figure 3 illustrates the SVR framework, where listening comprehension (i.e. linguistic comprehension) and word decoding skills result in adequate reading comprehension. However, whilst the SVR model has been widely researched and has been a cornerstone of reading research, it has been criticised for being overly simplistic and not including other processes known to be crucial in reading, such as executive functions (Duke & Cartwright, 2021; Spencer et al., 2020).

Figure 3

The SVR Framework



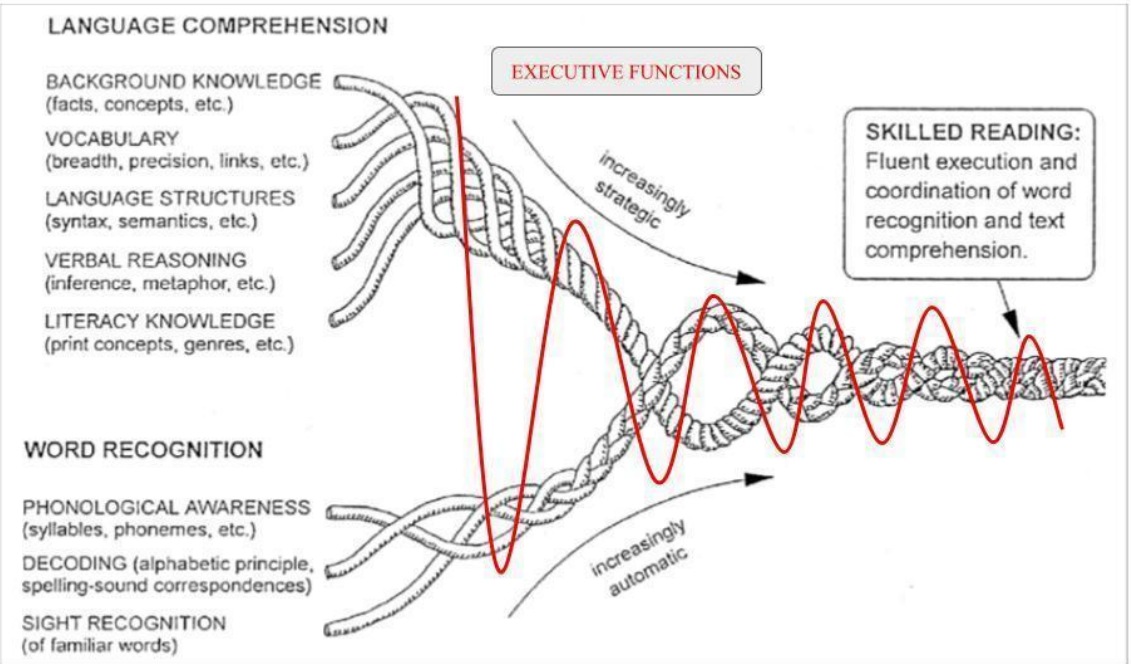
In 2001, Hollis Scarborough formulated a model for reading acquisition by expanding on the SVR (Jump & Johnson, 2022), referred to as Scarborough's reading rope model. Through the metaphor of a rope, Scarborough demonstrated how different elements of reading (word recognition and language comprehension) come together, like strands, for proficient reading to occur. Scarborough's reading rope model further details the elements of word recognition (phonological awareness, decoding, sight word recognition) and language comprehension (background and content knowledge, vocabulary, language structures, verbal reasoning, literacy knowledge) (Jump & Johnson, 2022). All of these components are interrelated, and language comprehension and word recognition must integrate for successful reading comprehension to take place (Jump & Johnson, 2022). As word recognition skills become more automatic, and language comprehension becomes more strategic; thus, reading comprehension skills improve (Kieffer & Christodoulou, 2020).

However, the reading rope model was updated in 2015, where executive functions were added as strands interwoven throughout the whole process (Aboud et al., 2015, as cited in Kieffer & Christodoulou, 2020). Executive functions enable the management of complex and goal-directed tasks, such as reading (Cartwright et al., 2020) and have been shown in recent literature as being important skills in predicting reading comprehension (Kieffer &

Christodoulou, 2020). While the literature varies on the specific processes considered as executive functions, three core dimensions are commonly cited: working memory, attention shifting, and inhibitory control (Kieffer & Christodoulou, 2020). Although, Duke and Cartwright (2021) note that many practitioners are still being presented with the 2001 version of the reading rope model and not the updated 2015 model with executive functions added to it.Figure 4 illustrates the "many strands that are woven into skilled reading" (Jump & Johnson, 2022, p. 11).

Figure 4

The Updated Reading Rope Model



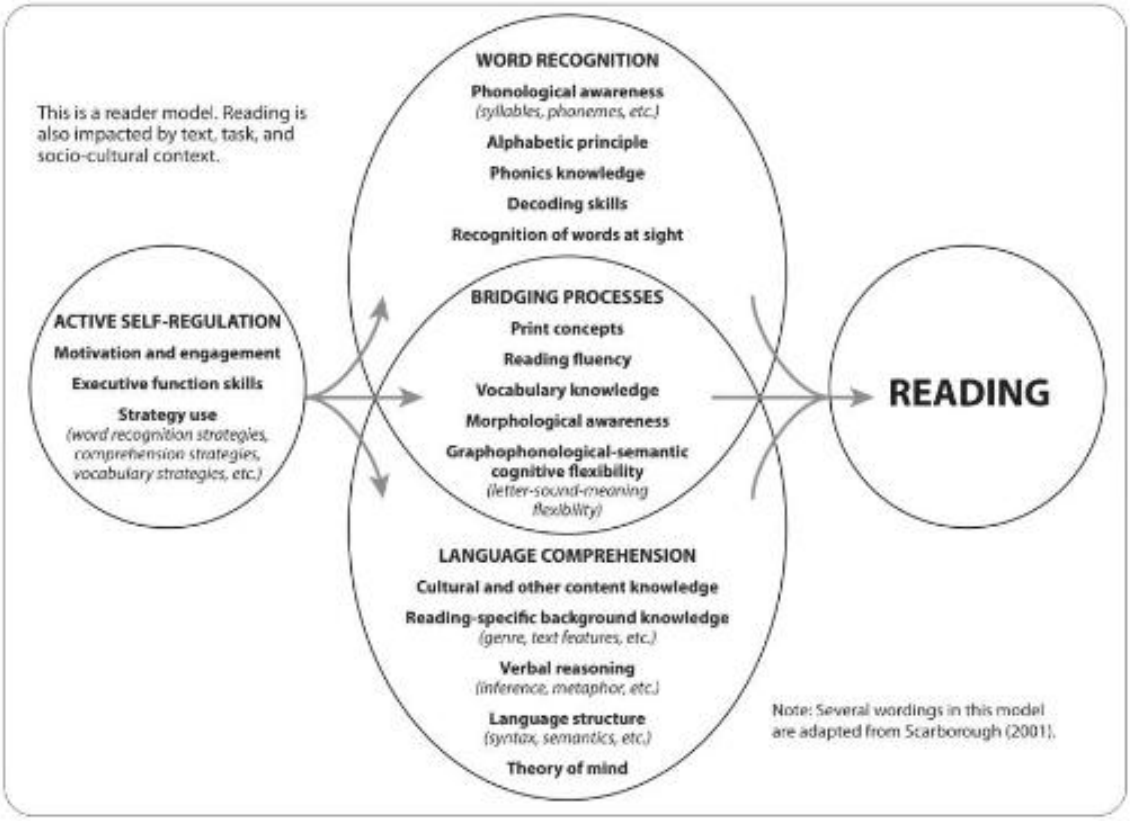
Note. Adapted from Duke and Cartwright (2021).

In 2021, Duke and Cartwright presented their active view of reading model (AVR), which expands on the SVR and the reading rope model. Figure 5 below illustrates the AVR model. The AVR model recognises that word recognition and language comprehension merge through 'bridging processes' (Jump & Johnson, 2022). The AVR also includes active self-regulation, which impacts language comprehension, bridging processes, and word recognition

(Jump & Johnson, 2022). Active self-regulation includes motivation and engagement, executive functions (discussed under Scarborough's reading rope model above), and the use of strategies. The AVR formed part of the first workshop, discussing the most current theory regarding reading development. The AVR was chosen as it specifically includes the use of strategies to facilitate reading. A limitation of the AVR is that because it is such a recent model, it has not yet been tested comprehensively in research (Duke & Cartwright, 2021). The study aimed to test this model in research, albeit not by assessing learner outcomes, but rather through examining participants' perceptions of multimodal strategies taught within the framework of this model.

Figure 5

The Active View of Reading Model



Note. From Jump and Johnson (2022).

Rationale

There have been many research studies conducted in South Africa that have called for further teacher training with regards to both dyslexia and literacy instruction, especially given the dire straits of literacy levels in South Africa. It has been outlined in the literature that there is a need for an approach that could implement inclusive practices within the mainstream classroom. This study aimed to add to the body of research within South Africa demonstrating the effect of providing teachers with practical strategies to support learners during literacy instruction (either with learning barriers or those who are typically developing).

The CPD workshops were designed by the researcher, who is an SLT, to demonstrate that SLTs can collaborate with teachers and provide ongoing support for teachers in their classrooms.

Chapter 3: Methodology

In this chapter, the method of the study will be discussed. The main aim of the study was to examine the effectiveness of teacher training on how to design a dyslexia-friendly classroom. Consequently, the primary research question was the following: Is teacher training on how to set up a dyslexia-friendly classroom effective for teachers? Further, the sub-aims of the study were as follows:

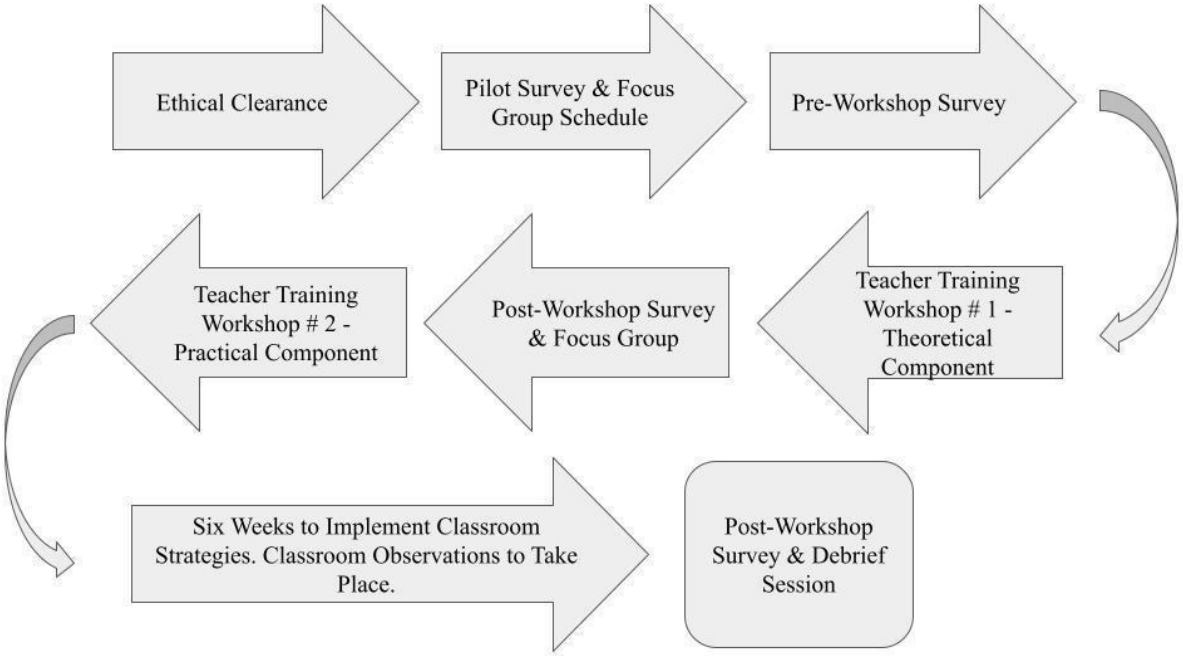
1. To describe the participants' knowledge following two CPD workshops.
2. To describe the literacy strategies the participants used in the classroom after attending two CPD workshops.
3. To describe the challenges that the participants faced when creating a dyslexia-friendly classroom.
4. To describe the participants' perceptions of the role of the SLT in supporting teachers during literacy instruction.

Research Design

The study involved a mixed-methods approach within a participatory action research (PAR) model. The sequence of the study procedure is shown in figure 6 below. PAR was chosen because it is practical and collaborative, where information can be shared through focus group discussions (Ayaya et al., 2020; Namugenyi, 2019). In a PAR approach, the researcher and participants jointly identify a problem, plan and implement a solution, and then reflect on the intervention before evaluating the solution to improve knowledge and practice (Namugenyi, 2019). PAR is cyclical and follows cycles of observation, reflection, action, evaluation, and modification, before moving on in the new direction, as outlined in Figure 7.

Figure 6

Study Procedure



The primary motivation for this research stems from the critical issue of low literacy levels in South Africa and the shortage of SLTs whose expertise includes addressing literacy challenges. Recognising the urgent need for collaboration between SLTs and teachers to combat the literacy crisis, this study sought to develop and evaluate strategies for literacy development in foundation-phase classrooms, particularly in resource-constrained conditions. The research was conducted through a reflective and cyclical process, involving two main cycles of observation, analysis, and intervention; outlined in figure 7 below.

This study employed a mixed-methods design, which integrates both quantitative and qualitative approaches to provide a comprehensive analysis of the research findings and a deeper understanding of the results (Ivankova et al., 2007). In this study, quantitative methods were used to analyse the participants' responses to the closed-ended questions and Likert-type

scales in the pre- and post-workshop surveys. Quantitative research is designed to quantify variations in a phenomenon, allowing for statistical analysis and comparison (Kumar, 2005). In contrast, the qualitative aspect of the study focused on exploring how participants made sense of their experiences. This approach involved analysing participants' perceptions, attitudes, understanding, knowledge, values, and experiences (Nieuwenhuis, 2007a). The participants' responses to the open-ended questions on the surveys, as well as their contributions during the focus group discussions, were examined using qualitative methods. The research design was also longitudinal because it examined the effects of intervention over a period of six weeks to allow for the strategies to be implemented in the classroom.

Participant Description

The participants were recruited through non-probability sampling. Non-probability sampling is where a particular group is selected to study, knowing that it does not target the broader population (Maree & Pieterson, 2007a), which is often the case for small-scale research and action research (Cohen et al., 2007), such as this study. Both convenience and purposive sampling are types of non-probability sampling (Maree & Pieterson, 2007a) that were utilised in the study. Convenience sampling includes participants who are available and accessible at the time, but generalisability is negligible (Cohen et al., 2007). Purposive sampling is used with a specific set of characteristics in mind and is usually a feature of qualitative research due to the fact that the researcher singles out participants to include in the study based on the particular features of the participant (Cohen et al., 2007). In the case of this study, convenience and purposive sampling were utilised as the participants who were included were specifically foundation-phase teachers in a mainstream school setting, who worked at one school, and who were available to attend a workshop on the proposed date.

Teachers from an under-resourced private school in a peri-urban area were invited to participate in the study. This population was chosen because there is a paucity of research on

implementing multimodal strategies in the foundation phase of primary schools in South Africa, thus the study focused on training teachers in a dyslexia-friendly classroom design to support all learners in their classrooms. The foundation phase includes Grades R, 1, 2 and 3. This phase was targeted specifically as it is where academic language skills, phonological awareness skills, and decoding skills come together to produce written language and reading for meaning. All teachers from each grade in the foundation phase were invited to participate.

Inclusion Criteria

The inclusion criteria for participants required that they be registered with the South African Council for Educators (SACE) and taught in the foundation phase at the time of the study. Educators at any experience level, regardless of the number of years of teaching experience, were eligible to participate.

Exclusion Criteria

To ensure a more homogenous group for comparison, participants who had advanced qualifications related to working with children facing barriers to learning (such as a remedial teaching diploma) were excluded from the study.

Sample Demographics

The sample size was seven (n=7) participants as these were the amount of teachers working within the foundation-phase at the research site. Information regarding the demographics of the participants was gathered during the first survey administered before the first CPD workshop. This included years of teaching experience, other qualifications held, if they thought there was a need for further training, and if they had previously attended CPD events relating to literacy. Table 1 outlines the participants' responses.

Table 1

Sample Demographics

Participant ID	Years of Teaching Experience	Other qualifications	Is there a need for further training?	Previous CPD Attendance
P1	25	No	Yes	Yes
P2	18	No	Yes	Yes
P3	18	No	Yes	No
P4	27	No	Yes	No
P5	18	No	Yes	Yes
P6	4	No	Yes	Yes
P7	19	Yes	Yes	Yes

The first survey had a sample of seven (n=7) participants, while the second and third survey had six (n=6). Participants were active foundation-phase teachers at a private primary school in Yeoville, Johannesburg. The participants in the sample were all female and had a degree in education. The mean years of experience was 18.43 years, with a standard deviation of 7.37 years. The participant with the least amount of experience had 4 years of experience, while the participant with the most years of experience had 27 years of experience.

The majority of participants (n=6) did not hold other qualifications. One participant (n=1) held another qualification, but this was unrelated to the field of education. All but two of the participants (n=5) had attended prior training on literacy.

Description of Site

The school was an independent primary and high school that charges fees, and it was located in a high-density peri-urban area of Johannesburg Central. The school followed a Curriculum and Assessment Policy Statement (CAPS) curriculum In South Africa, schools can either be public or independent (private) schools. Low-fee independent schools are a growing

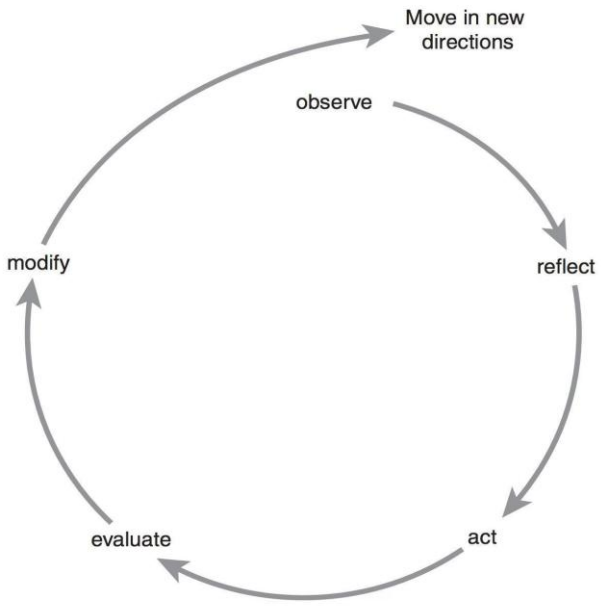
sector in South Africa's poorer areas where public schools may not be available, and when they are available, parents may prefer a private school due to the perceived increased quality of education for their children (Hofmeyr et al., 2013).

Data Collection

Data was collected via pre- and post-workshop surveys, focus group interviews, and classroom observations. Data was collected in two cycles, within a PAR model which is illustrated in figure 7 below and then described in the proceeding paragraphs.

Figure 7

Participatory Action Research Cycle



Note. From McNiff (2017, p. 12).

Cycle 1

During the observation phase, the researcher assessed the participants' existing knowledge and practices related to literacy instruction using a pre-workshop survey. After reflecting on the survey responses, the researcher identified areas where participants expressed a need for further development. This feedback informed adjustments to the curriculum for the

first workshop. The participants' understanding of the concepts taught in this workshop was then evaluated through a post-workshop survey. Based on an analysis of the evaluation forms and survey results, the researcher made further modifications to the content and structure of the subsequent workshop. Additionally, a focus group was conducted after the first workshop, providing participants with an opportunity to reflect on changes in their beliefs and knowledge about literacy development theory and to assess their own practices. This focus group also served as a collaborative platform for participants to discuss their needs for the practical workshop (the second workshop), and work with the researcher to plan its content.

Cycle 2

Based on responses from the second survey, administered after the first workshop, and outcomes from the initial focus group, the researcher identified the participants' current needs and made the necessary adjustments to the content and structure of the second workshop. During this second workshop, participants had the opportunity to reflect on their understanding of literacy development and language-based barriers to learning. After the workshop, a six-week intervention period followed, during which participants implemented and evaluated the strategies they had learned, with the flexibility to modify their practices as needed.

Throughout this period, the researcher observed participants during literacy lessons, providing feedback to help them reflect on and refine their instructional practices. This observational approach was chosen as a qualitative data collection technique to gain deeper insights into the participants' instructional methods (Nieuwenhuis, 2007a). Following the intervention, participants' understandings of the concepts from the second workshop were assessed through a post-workshop survey. A debriefing session was also conducted, allowing participants to reflect on and evaluate their beliefs, knowledge, and practices related to literacy instruction.

Instruments

Surveys. Pre- and post-workshop surveys were designed by the researcher and piloted prior to administering to the participants. The items on the surveys were based on the aims and outcomes of the workshops. Please refer to Appendix D for the aims of the CPD workshops. The surveys had both open- and closed-ended questions as well as Likert-type scales. Closed-ended questions are useful to compare responses of participants and to analyse statistically; whilst open-ended questions can derive the specific nature of a specific situation and yields itself towards more qualitative research (Cohen, 2007). Likert-type scales were used as they give an ordinal measure of a participant's attitude, and are convenient when measuring a construct (in this case, participants' perceptions of their knowledge before and after the CPD workshops) (Maree & Pieterson, 2007c).

The surveys were administered before and after the first CPD workshop. Another survey was then administered after the second workshop, and a third survey was administered following the six weeks of the participants' implementing the concepts and strategies taught in both workshops. The pre- and post-workshop survey took ten minutes to complete and were provided on paper in a group setting. The advantages of group administration of surveys include: many participants can complete the surveys in a short space of time; it is low cost; it favours an optimal response rate; and the researcher can respond to any issues related to the surveys immediately (Maree & Pieterson, 2007b). However, some disadvantages include: if different administrators administer the surveys responses can vary too widely; the environmental conditions cannot be controlled by the researcher; and costs can be high if administering standardised surveys (Maree & Pieterson, 2007b). Please refer to Appendix A, B and C for the surveys. Tables 2, 3, and 4 outline the rationales for the various sections addressed in the surveys.

Table 2

Rationales for the Pre-Workshop Survey

Sections	Item Numbers	Rationale
Demographics	1–4, 8, 16	I. To address the inclusion criteria. II. To explore the relationship between experience teaching (in years) and response to the intervention. III. To identify the context that the participants work in.
Participants' perceptions of CPD trainings	5–7	I. To identify participants' perceptions on the need for further training regarding literacy instruction. II. To gain the participants' buy-in by addressing the core principles of adult learning in andragogy. III. To ensure a collaborative approach by following the principles of PAR.
Participants' current knowledge of literacy development, language-based learning disorders, and instructional strategies.	9–15	I. To identify the participants' current knowledge in order to compare to their responses post workshops #1 and #2.

Table 3

Rationales for the Post-Workshop Survey #1

Sections	Item Numbers	Rationale
Demographics	1–4	I. To address the inclusion criteria. II. To explore the relationship between years of experience teaching and response to the intervention. II. To identify the context that the participants work in.
Participants' current knowledge of literacy development, language-based learning disorders, the role of the SLT, and dyslexia-friendly classrooms.	5–10	I. To identify the participants' current knowledge in order to compare to their responses to the pre-workshop survey and post-workshop survey #1 and #2. II. To modify the content of workshop #2 should a need to review information taught in workshop #1 be noted.
Participants' perceptions of the change in their knowledge, and understanding, of content taught in workshop #1.	11	I. To obtain information on the participants' perception of the efficacy of workshop #1.

Table 4

Rationales for the Post-Workshop Survey #2

Sections	Item Numbers	Rationale
Demographics	1– 4, 7–8, 14-16	I. To address the inclusion criteria. II. To explore the relationship between years of experience teaching and response to the intervention. III. To identify the context that the participants work in.
Participants' perceptions of the efficacy and applicability of the strategies taught in workshop #2	5–13	I. To identify and explore themes surrounding the participants' experiences in implementing an inclusive framework and multisensory strategies in their classrooms.
Participants' perceptions of the change in their instructional practices following workshop #2.	14 & 15	I. To obtain information on the participants' perception of the efficacy of workshop #2.

Classroom Observation Checklist. A checklist was developed by the researcher to record participants' practices during an observed reading instruction lesson. The items on the classroom observation checklist were formulated from the objectives of both workshops and were organised in a yes/no format. These items were grouped according to the AVR model (Duke & Cartwright, 2021) and the GRR model (Pearson et al., 2019). Strategies were sourced from Reid and Green (2011) as well as www.readingrockets.org. The checklist sections focused on observing participants' implementation of strategies related to: (i) the GRR model; (ii)

engaging learners' executive functions; (iii) adapting the presentation of information; (iv) supporting language comprehension; and (v) supporting word recognition.

Observation, while valuable, presents certain challenges: it can be subjective, risking a focus on details rather than the overall context (Nieuwenhuis, 2007a). Additionally, observations often lack control and face issues related to access, sample size, and maintaining anonymity (Cohen et al., 2007). However, observation also offers unique insights by allowing the researcher to actively participate in the research setting (Nieuwenhuis, 2007a), uncovering details that might otherwise be overlooked and providing a deeper understanding of the research context (Cohen et al., 2007).

In this study, field notes were taken during observation of a one-hour literacy lesson. Classroom observations were used to evaluate the application of literacy strategies introduced in the workshops. The data collected from the checklists were then compared with participants' self-reported perceptions of their skill improvement from post-workshop survey #2. These checklists were further analysed to identify any areas needing additional reinforcement. The classroom observation checklist is provided in Appendix F.

Table 5

Sections Included in the Classroom Observation Checklist and Their Respective Rationales

Sections	Item Numbers	Rationale
Gradual release of responsibility	1–4	Allows the learner to become independent through graduated decrease of responsibility on the participant's side, and increased responsibility for learning on the learner's side.
Executive functions	5–12	Executive functions play a critical role in supporting reading comprehension, as discussed previously in the conceptual framework.
Presentation of information	13–19	Information should be represented in multiple ways, using multimodal approaches, which have been shown to be an effective practice in the inclusive classroom.
Language comprehension	20–30	As per the updated AVR model, adequate language comprehension skills are required for successful reading to occur.
Word recognition	31–36	As per the AVR model, adequate word recognition skills are required for successful reading to occur.

Interview Schedule - Focus Group. An interview schedule was used to collect qualitative data from two focus groups. A disadvantage of an interview schedule with a predetermined set of questions is that it may lead to a response bias if the questions are framed in a certain way. However, there was a set of open-ended interview questions that guided the

facilitator and the open-ended questions allowed the participants to describe their experiences. The focus groups were used to collect qualitative data as they rely on the interaction between the participants of the group rather than a back-and-forth between the researcher and group members, which constructs a collective view rather than an individual view (Cohen et al., 2007). Advantages of focus groups include: i) they are not time intensive; ii) they yield large amounts of data in a short period of time; and iii) they produce data that may not have been gleaned from individual interviews (Cohen et al., 2007). Disadvantages of focus groups include: that they do not yield quantitative data (that can be generalisable due to small sample size); group dynamics can lead to varying levels of engagement by the group members; the number of topics must be limited; and reliability may be lacking (Nieuwenhuis, 2007a).

The interview schedule and questions were based on the aims of the workshops. The researcher was the moderator of the focus groups. Incentives to use the researcher as the moderator include: i) cost effectiveness where no external moderator will need to be employed or further transport costs to be considered; ii) the researcher as the moderator will have high familiarity with the area of research (Tausch & Menold, 2016), which means that the moderator will be able to answer any queries that the participants have without having to consult someone else; and iii) a positive and comfortable relationship would hopefully have been established between the researcher and the participants as two workshops and a focus group were held. This positive and comfortable relationship enabled a more free and open group discussion. However, some downsides of having the researcher as the moderator include that the participants may position the moderator as the ‘content expert’, which may lead to the participants becoming less vocal in the discussion (Reventlow, & Tulinius, 2005). To combat this, the moderator must recognise themselves as a contributing participant (Reventlow, & Tulinius, 2005), rather than the ‘leader’ of the discussion. A focus group was conducted after the first workshop, and then after the second workshop (referred to as the debriefing session.

The focus groups were conducted as part of the PAR model so as to include the participants in the research process. The first focus group had six (n=6) participants as one participant had to leave early to attend to her school duties. The second focus group also had six (n=6) participants as one participant had left the study. Please refer to Appendix E for the interview schedule.

Table 6

Sections Included in the Interview Schedule and Their Respective Rationales

Sections	Item Numbers	Rationale
Content of the workshops	1, 2	I. To allow the participants to observe and reflect on their initial practices and any changes they had made to their practices.
Conceptual knowledge	3–8	I. To identify if the participants were able to evaluate their previous and current knowledge and practices. II. To gain information on whether the participants were able to modify their teaching practices.
Planning and collaboration	9	I. To plan together with the participants based on their perceived needs to modify the curriculum for the next workshop. This follows the principles of andragogy.

Pilot Study Procedure

Once ethical clearance was obtained, the survey was piloted and administered to a foundation-phase teacher (who did not participate in the final study), to i) ensure the clarity of the survey items, instructions and layout; ii) check the validity and reliability; iii) ensure that the language used is coherent and that the questions are clear and understandable (Cohen et al., 2007). The principal of the foundation-phase participated in the pilot study of the first survey; this was timed to gain an understanding of how much time should be allotted to complete the surveys in the final study. From the participant's responses on the pilot survey, no survey questions needed to be altered or changed. Please refer to Appendix A, B and C for the workshop surveys.

Pre- and Post-Workshop Survey Procedure

An information sheet and consent form were distributed to prospective participants through their school. The participant information sheet outlined the study's aims and the requirements for participation. The consent form specified what participation entailed, including completing the survey, joining the focus group, and being observed in the classroom. It also assured participants of their anonymity but clarified that confidentiality of their responses could not be fully guaranteed, as their answers would be presented in tables in the final research report. The form also provided details on potential risks, benefits, and the measures taken to protect anonymity and confidentiality.

Workshop #1 Programme - Theory

All participants who consented to take part in the study attended the same workshop, at a time convenient to them, with permission granted by the school principal. The workshop took place on school property so that the participants would not incur any travel expenses and that time would not be spent travelling to an external venue. The aim of the workshops were to provide the theoretical underpinnings regarding: i) definitions of dyslexia and language-based

learning disorders; ii) literacy development; iii) the role of the SLT in the school setting; and iv) defining a dyslexia-friendly classroom. The researcher was the workshop facilitator.

Focus Group

The focus group was conducted in person at the participants' school at a convenient time and lasted one hour. The session was audio recorded, with the researcher serving as moderator who facilitated the discussion using probing questions. The questions started broadly and then focused on specific questions relating to how participants understood the theoretical foundations of the first workshop. The focus group also provided an opportunity for participants to reflect on any changes in their beliefs and knowledge regarding the theory of literacy development and to evaluate their own practices as part of the PAR cycle. Additionally, the focus group allowed participants to collaborate with the researcher in planning the practical workshop, Workshop #2, by identifying the content they deemed important. A schedule of the first focus group is provided in Appendix E.

Workshop #2 Programme - Practical

All participants who consented to join the study were invited to attend a second, practical workshop. This workshop was scheduled at a time convenient for the participants, with the school principal’s permission. To avoid travel expenses and save time, the workshop was held on school premises once again. The researcher facilitated the session, which focused on practical strategies for enhancing literacy development in the classroom. The workshop covered: (i) incorporating the GRR model into instructional practices to provide scaffolding for learners; (ii) optimising how information is presented to learners; and (iii) employing various literacy strategies to target executive functions, language comprehension, bridging processes, and word recognition during literacy instruction.

Debrief Session

Following the second workshop, participants engaged in a six-week intervention period to implement the strategies they had learned. Afterward, a debriefing meeting was held, allowing participants to reflect on and evaluate any changes in their beliefs, knowledge, and practices regarding literacy instruction. This reflection aimed to help them modify their practices and explore new directions. The researcher also provided feedback based on classroom observations conducted after the second workshop. The debrief session was held in person at the participants' school, lasted one hour, and was scheduled at a time convenient for them.

Ethics Procedures and Principles

Ethical approval was obtained from the Non-Medical Human Research Committee at the University of the Witwatersrand (see Appendix L). Following this, permission was sought from the school principal, as approval from the Department of Education was not required since the school was private (see Appendix G and J). After securing the necessary permissions, the participants were invited to join the study (see Appendix H and I). The names of the research participants and the identity of the school were kept anonymous in the reporting of the results and the researcher kept these identities confidential. Anonymity is maintained in this document and will be maintained in all possible future publications that may arise from this study. The surveys were stored in a locked box at the researcher’s home and will not be destroyed. The audio recordings of the focus group were stored on the researcher’s password-protected computer and will not be destroyed. However, due to the nature of the focus groups, anonymity between the participants is not possible. The research report will be made available on the internet through WIReDSpace, accessible through the University of the Witwatersrand’s library website for the participants to access if they wish. The ethical principles followed

throughout the study are discussed below under informed consent and confidentiality, beneficence, non-maleficence and justice.

Informed Consent and Confidentiality

Participants were given an information sheet and consent form detailing the study's aims, the use of the collected data, and their right to withdraw at any time. Participation was voluntary, though anonymity and confidentiality could not be fully guaranteed due to the group setting of the workshops and focus groups where participants were familiar with each other. However, anonymity was ensured when administering surveys to assess participants' knowledge of learning barriers, multimodal instruction, and their perceptions of creating a dyslexia-friendly classroom on teaching practices and literacy outcomes.

Beneficence

Beneficence refers to the sense that one's behaviour will benefit others and will have a positive impact (Martela & Riekki, 2018). The study aimed to provide access to crucial information to foundation-phase teachers to directly improve the literacy outcomes of their learners with applicability straight away. Thus, this was acting in the best interests of the participants (the teachers), as well as their learners, whom the study also impacts.

Non-maleficence

A repercussion of beneficence is non-maleficence and refers to doing no harm (Cohen et al., 2007). No negative implications for the participants was expected from the study in terms of completing the surveys or being interviewed within focus groups.

Justice

Distributive justice refers to a balance between risks to the research participants and benefits of the research for wider society (Anabo et al., 2019). In the study, all participants

were treated equally and were provided with the same resources. All participants received the same information presented in the workshops as well as the same information regarding the implications and outcomes of the proposed study.

Data Analysis

Content analysis was used to examine responses to the open-ended survey questions and to compare these with the classroom observation checklist. This analysis aimed to identify similarities and differences between the researcher's observations and the participants' application of literacy strategies. Content analysis systematically summarises response content and compares data sources to confirm or refute theories (Nieuwenhuis, 2007b). It provides both qualitative and quantitative descriptions of the data (Vaismoradi et al., 2013). To quantify the results, descriptive statistics, including frequency distributions and percentages, along with graphical representations, such as pie charts and bar charts, were utilised.

Data from the focus groups were analysed using thematic analysis, a qualitative method for identifying, analysing, and reporting patterns in the data (Braun & Clarke, 2006). This approach seeks common threads across interviews and was used to explore themes within the participants' responses.

The classroom observation checklist as well as the responses to the open- and close-ended questions and Likert-type scales from the surveys were analysed using descriptive statistics. Descriptive statistics describe the data without necessarily making inferences about them (Cohen, 2007) and it presents the findings graphically or numerically, which enhances understanding of the data (Maree & Pieterson, 2007d). The statistics included frequency distribution and percentages. Non-parametric tests, such as the Wilcoxon signed-rank test to compare changes in knowledge levels, could not be used as the participants were not matched throughout the administration of the different surveys.

Reliability and Validity

Pilot Study

Once ethical clearance was obtained, the survey was piloted and administered to a foundation-phase teacher (who did not participate in the final study). This was done to: i) ensure the clarity of the survey items, instructions and layout; ii) check the validity and reliability; iii) ensure that the language used was coherent and that the questions were clear and understandable (Cohen et al., 2007). Please refer to Appendix A, B and C for the surveys.

Reliability

Reliability refers to the consistency and repeatability of a measurement instrument (Maree & Pieterson, 2007b). Inter-rater reliability refers to whether or not another researcher with the same theoretical framework, observing the same thing, would interpret what they observed in the same way (Cohen et al., 2007). The time it took to complete the survey was checked in the pilot study.

Validity

The validity of an instrument refers to its effectiveness in measuring what it is intended to measure (Maree & Pieterson, 2007b). Content validity specifically assesses how thoroughly the instrument covers the intended topic, ensuring fair representation of all relevant elements (Cohen et al., 2007). To ensure content validity, an expert reviewed the surveys, interview schedule, and classroom observation checklist to confirm that these tools accurately measured the aspects under investigation in the study.

Trustworthiness

Trustworthiness refers to the rigor, consistency, and credibility of a study (Nieuwenhuis, 2007b). In this study, data from surveys, the classroom observation checklist, and focus group interviews were consolidated. To ensure the trustworthiness of the data

analysis, triangulation was employed. This involved comparing data from multiple sources to verify themes and provide a comprehensive understanding. Triangulation uses multiple methods to gather data on human behaviour, offering a richer and more complex view by integrating both qualitative and quantitative data (Cohen et al., 2007).

Credibility.

Credibility is the degree to which the research reflects the true experiences of the research participants (Moon et al., 2016). Triangulation of the three data sources (as described above) as well as the longitudinal nature of the study (which was carried out over ten weeks) lent to the credibility of the study's findings.

Dependability.

Dependability is used in qualitative research to refer to how consistent and reliable the research findings are (Moon et al., 2016). The researcher's reflective notes increase the transparency of the research processes to reduce bias and aid the replicability of the study in the future.

Transferability.

Transferability is a type of external validity that speaks to how applicable the research findings are to ither contexts (Moon et al., 2016). The results of the current study can be considered transferable due to the reflexive nature of the study; where a participatory action research (PAR) model was followed where participants and the researcher continuously reflected on aims and outcomes of the study (through the focus groups, surveys, classroom observations and researchers reflective notes). The PAR approach together with the triangulation of data sources increases the transferability of the findings of the study as the study is more replicable.

Confirmability.

Confirmability is the process how the results of a study are linked to the conclusions and how well this process can be replicated (Moon et al., 2016). The transparency of the research process through triangulation of the data sources and following a PAR approach increase the confirmability of this study.

Chapter 4: Findings

The quantitative and qualitative results will be presented together with the discussion of the results in this chapter. The quantitative findings will be presented according to the aims of the study. The qualitative findings also addressed the aims of the study but are presented after the quantitative findings according to theme rather than aims as recurring themes were found throughout the results of the study. Quantitative analysis was conducted using descriptive statistics; while thematic and content analysis was utilised for qualitative analysis.

The main aim of the study was to examine the effectiveness of teacher training on how to design a dyslexia-friendly classroom incorporating literacy strategies into their instructional practices. The sub-aims of the study were as follows:

1. To describe the participants' knowledge following two CPD workshops.
2. To describe the literacy strategies the participants used in the classroom after attending two CPD workshops.
3. To describe the challenges that the participants faced when creating a dyslexia-friendly classroom.
4. To describe the participants' perceptions on the role of the SLT in supporting teachers during literacy instruction.

Table 7 provides an overview of the timeline of the administration of the instruments as well as the analysis utilised for each instrument.

Classroom Demographics

Information regarding the number of learners per class and learners identified with literacy difficulties was gathered during the first survey administered before the first CPD workshop. The results are outlined in Table 8.

Table 7

Timeline of the Administration of Instruments

Instruments	Time frame	Analysis
Pre-workshop survey 1	Before the first CPD workshop.	● Frequencies ● Content analysis
Workshop 1: *"Creating a Dyslexia-Friendly Classroom: Theory"*		
Post-workshop survey 1	After the first CPD workshop, before the second workshop.	● Frequencies ● Content analysis
Workshop 2: "*Creating a Dyslexia-Friendly Classroom: Practical"*		
Post-workshop survey 2	At the end of the second workshop.	● Frequencies ● Content analysis
Focus group 1	One week after the first workshop.	Thematic analysis
Focus group 2	Six weeks after the second CPD workshop.	Thematic analysis

Table 8

Descriptive Statistics of Learners in the Participants' Classrooms

	Min.	Max.	Mean	Std. Dev.
Number of learners in the class	17	30	23.43	5.71
Number of learners presenting with literacy difficulties	2	10	5.50	3.30

Note. Descriptives based on 7 responses.

Participants were asked two questions: "How many learners are in your classroom?" and "How many learners do you teach who have difficulties with learning?" The second question focused specifically on learning difficulties in reading, writing, or spelling, as

identified by the participants, without the need for formal diagnoses. The descriptive statistics revealed that classroom sizes varied widely, with an average of 23.43 learners (standard deviation = 5.71). Among these, approximately 5.50 learners on average (standard deviation = 3.30) were identified as having literacy difficulties. Notably, the learner-to-educator ratio at the sample school was lower than the average ratio in Gauteng, which is 31.4:1 (DBE, 2014, as cited in Meier & West, 2020).

Sub-Aim 1: To Describe the Participants' Knowledge Following Two CPD Workshops

Abilities to Provide Definitions Pre- and Post-CPD Workshop

The participants were asked to define 'dyslexia', 'phonological awareness' and 'phonics' in the survey administered before and after the first CPD workshop. When defining dyslexia, two components were required in order to receive a score of 1. Components of the definition included that it is a learning disorder, and that it affects reading, spelling or writing. Phonics and phonological awareness are two different, but related, skills amongst others required for literacy development. When defining phonological awareness, two aspects were required to receive a score of 1. This included the terms of either (i)'sentences' or 'words' that are made up of (ii) 'smaller parts' or 'units'. When defining the term 'phonics', two components were required to receive a score of 1. This included the terms 'sounds' and 'letters' or 'alphabet', and 'correspondence', 'association' or 'relationship'. Table 9 outlines the responses that received a correct score.

Table 9 shows that most (n=5) of the participants were able to define dyslexia adequately prior to the first workshop. A slight decrease was noted in the participants' ability to define dyslexia post the first workshop; however, this was not of concern as there was one participant who dropped out that could have contributed to the decline. Responses to open-ended questions from post-workshop survey 2 revealed that participants described a dyslexia-

friendly classroom as an inclusive classroom that can help all learners if the teaching strategies and the class environment is set up accordingly.

Table 9

Responses to Knowledge-Based Questions Across Surveys

Question	Pre-Workshop Survey (1) N=7		Post-Workshop Survey (2) N=6	
	n	(%)	n	(%)
What is dyslexia?	5	71.4%	4	66.7%
What is phonological awareness?	1	14.3%	3	50.0%
What is phonics?	6	85.7%	5	83.3%

Note. Percentage reflects % of correct responses.

As shown in Table 9, there was a slight improvement in how the participants defined phonological awareness. The participants appeared to have a general understanding of what phonics was before and after the workshop. The results from Table 9 are similar to a longitudinal study conducted by Wium et al. (2010) (the researchers comprised of SLTs and one educator). They conducted teacher-training workshops with mentoring components, where the participants' knowledge (on the targeted concepts of that CPD workshop) improved on post-workshop questionnaires. This contrasts with a study conducted by Namugenyi (2019), which revealed that the teacher participants had little knowledge of phonics before the CPD workshops. Though the results by Namugenyi (2019) contrast with this study, their results are not surprising given that the study was longitudinal and ran over twenty-one weeks with frequent contact between the researcher and participants. The fact that the participant in this study could define phonics could be due to prior workshop attendance. Improvement in

definition abilities indicated that the aims of the CPD events were met. These findings may support the idea that SLTs can and should support teachers in their classrooms.

Participants' Perceptions Pre- and Post-Workshop

Participants were asked to respond to the statement "I am able to provide a working definition of dyslexia" via a Likert-type scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Table 10 summarises the descriptive statistics for this question and demonstrates that the participants' perception of their own abilities to provide a working definition of dyslexia increased after the theoretical workshop (before: mean = 2.20, standard deviation = 0.84; after: mean = 3.60, standard deviation = 0.55). This indicates an increase in the participants' self-perceived abilities to define dyslexia.

Table 10

Responses to a Likert-Type Scale Before and After the First CPD Workshop

Time	Mean	Std. Dev.	N	Min	Max
Before	2.20	0.84	5	1	3
After	3.60	0.55	5	3	4

From the responses to the Likert-type scale statement, the participants perceived that their knowledge on the definition of dyslexia improved following the CPD workshops. Most participants (n=5) were able to identify the core components of a definition of dyslexia prior to the first CPD workshop. This finding aligns with Matlebjane (2021), whose qualitative study on inclusion strategies used by teachers supporting learners with dyslexia revealed that participants had an adequate understanding of the term 'dyslexia.' According to Knowles' theory of andragogy (Knowles et al., 2014), adult learners' prior experience is one of the six core principles. It was evident that the participants had some prior exposure to and

understanding of dyslexia. By leveraging the adult learners' extensive knowledge and skills gained through years of practical experience with learners who have literacy challenges, the subject matter became more meaningful for them.

Participants' Perceptions of CPD Training

In the first survey, the participants were asked, "Do you think there is a need for teachers to receive further training regarding how to teach literacy skills?" Descriptive statistics revealed that all of the participants (n=7, 100%) reported that there was a need for further training on literacy. Most teachers (n=5, 71.40%) had already attended training prior to the CPD workshop held by the researcher. Other South African studies exploring teachers' perceptions of the need for further training have reported similar findings to the current study, where teachers themselves felt that there was a need for further in-service training (Makgato et al., 2022; Masalesa et al., 2019; Thompson, 2013). This is especially true when working with learners who have dyslexia (Leseyane et al., 2018; Matlebjane, 2021; Nkambule & Amsterdam, 2018; Nkomo et al., 2021; Ugwuanyi et al., 2020).

The participants were asked what content they wanted to be covered in the CPD workshops. Content analysis of the verbatim responses shown in Table 11 revealed that most of the participants (n=5) wanted training related to teaching approaches for teaching aspects literacy skills such as readings and writing. Two of the teachers wanted information on how to address learners with diverse literacy abilities.

Table 11

Verbatim Responses to Content Coverage in CPD Workshop

Participant	Response
P1	"Approaches and skills on how to teach literacy."
P2	"Dealing with learners who are not at the level they are in."
P3	"Especially writing."
P4	"How to deal with learners that refuse to read. i.e. those that just stare at the teacher or at what is to be read."
P5	"How to develop reading from sounds."
P6	"How to teach reading to slow learners."
P7	"Strategies on how to teach literacy."

Identifying Learners Who Struggle with Literacy

In the survey administered before the first workshop, the participants were asked how they identified learners in their classrooms that had difficulties with their literacy. Their responses are outlined in Table 12.

Table 12

Verbatim Responses to "How Do You Identify Learners Who Struggle with Literacy?"

Participant	Response
P1	"During learning, in group activities and when they write formal and informal assessments."
P2	"Slow [learners]."
P3	"[Learners] failing to read and interpret what others are doing."
P4	"We start by saying the alphabet sounds and then proceed to building and breaking down words and reading."
P5	No response
P6	"I can identify them through their pronunciation of sounds."
P7	"Asking learners to read for the teacher as individuals."

Content analysis of participants' responses in Table 12 revealed the themes of assessment tasks (n=3), group literacy activities (n=2), and slow learning pace (n=1) in relation to the ways in which the participants identified learners who were struggling with literacy. These results are supported by the findings of other South African studies that have explored teachers' perceptions of the need for further training when working with learners who have dyslexia. Local studies such as Leseyane et al., 2018; Matlebjane, 2021; Nkambule & Amsterdam, 2018; Nkomo et al., 2021; Ugwuanyi et al., 2020 showed that the identification and assessment of dyslexia in South Africa are inconsistent, and teachers' ability to recognise dyslexia varied widely, and there were significant inequalities in access to assessment services.

Participants' Knowledge of the Skills Needed to Develop Literacy

In the post-workshop survey (1), administered after the theory workshop, the participants were asked, "What skills do learners need to learn to read, write and spell?" Their responses are tabulated in Table 13.

Table 13

Verbatim Responses for "What Skills do Learners Need to Learn to Read, Write and Spell?"

Participant	Response
P1	"Sounding of the alphabet letters."
P2	"They need to break [up] the sounds first, read words and then spell to write."
P3	"Decoding skills."
P4	"Decoding and spelling."
P5	"Literacy skills are skills needed for reading and writing, they include things such as awareness of the sounds of languages and relationship between sounds and letters."
P6	"Phonetic skills."

Content analysis of responses in Table 13 revealed that participants were able to identify some phonological awareness skills required for literacy (reading, writing and spelling) such as letter-sound recognition (n=2) and segmenting (n=2). However, none were able to include any aspects of the bridging processes (print concepts, reading fluency vocabulary knowledge, morphological awareness), language comprehension, or active self-regulation (motivation and engagement, executive function skills, and strategy use). The only area of word decoding skills from the AVR model that the participants did not include in their responses was that of 'sight word recognition'. It is important to note that the AVR model is a recent model to be introduced in the literature (although it does build on previous models of reading comprehension), and intervention studies pertaining to teachers have not been widely

explored. This study adds to the beginnings of the research in this area as it pertains to teachers' awareness, and knowledge, of the processes involved in getting to reading comprehension.

Participants' Perceptions Pre- and Post- Workshop

A Likert-type scale was presented after the first CPD workshop posing: "I understand the components of literacy development." The 5-point Likert scale was as follows: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. Descriptive statistics indicated that there was a positive shift from the mean of the responses before the CPD workshop (mean = 2.40, standard deviation= 0.89) to after the CPD workshop (mean = 3.75, standard deviation = 0.5). The shift suggests that the participants felt that their knowledge on how literacy develops improved following the CPD workshops. Most of the participants (n=5) were able to identify core components of a definition of phonics prior to the first CPD workshop. The participants' knowledge regarding phonological awareness seemed to have also improved after receiving training on the area. However, their ability to apply the knowledge they had gained regarding multimodal instruction for phonics and phonological awareness in the classroom was inconsistent as per the findings of the classroom observations, discussed in further detail in the section 'Use of Literacy Strategies'.

Qualitative Findings

The qualitative results will now be presented and discussed under the theme of *participant knowledge*. Three sub-themes will also be discussed: *revision*; *prior knowledge*; and *reliance on previous practices.*

Participant Knowledge

Revision

Thematic analysis revealed the theme of *revision* for focus group 1, which was conducted a week after training workshop 1. The participants requested that the researcher go over the content already covered in the workshops. When asked if they had already known about the definitions that were provided in the workshop (dyslexia, multisensory, and dyslexia-friendly classrooms), or if they could recall the definitions provided, there was no response. Although the teachers felt they already had knowledge on the subject matter of the first workshop, their knowledge was largely superficial and they had difficulty with the specificities of the definitions. One of the participants responded that she had heard about dyslexia before:

> *..it wasn't new to us.*

However, she requested the researcher to go over the definitions again:

> *Can you refresh?*

This finding aligns with Wium and Louw's (2012) conclusion that continuous and extended CPD activities are crucial, especially given the diversity in teachers' qualifications and English language proficiency. In their study, after conducting a two-year training programme, they emphasised the need for ongoing CPD due to these variances. Similarly, in the current study, participants had teaching experience ranging from 4 to 27 years, and their English proficiency varied significantly. Some participants struggled with comprehension, as reflected in both their written survey responses and verbal contributions during focus groups, where sentence structure and vocabulary usage indicated limited proficiency.

The researcher initially assumed that all of the participants were proficient in English since it was the school's language of teaching and learning. However, in hindsight, it would have been beneficial to have a translator present during the focus groups and CPD workshops.

Given that not all teachers were native English speakers, their ability to fully understand and retain the workshop content delivered in English may have been compromised. Wium and Louw (2012) similarly identified language proficiency as a key factor influencing the success of their teacher training programme.

Another reason for the emphasis on revision might have been the participants' motivation levels (discussed more in detail later in this section). According to Knowles' andragogy theory for adult learners, low motivation can impede engagement with learning materials. The researcher hypothesises that the participants' heavy workloads and high teacher-to-learner ratios may have prevented them from reviewing the printed materials provided during the first CPD workshop.

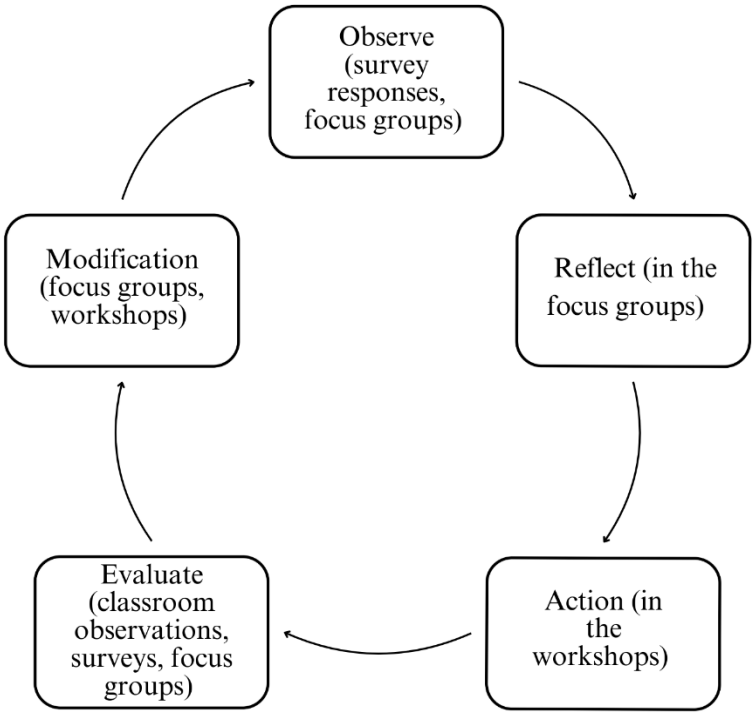
The researcher contends that review and revision should be integral components of CPD events, as one-off sessions are not considered best practice. Following a PAR approach, which involves cycles of observation, reflection, action, evaluation, and modification, it is essential to provide opportunities for reflection to evaluate and adjust teaching practices. The findings of the current study underscore the importance of CPD events being continuous rather than singular occurrences, allowing for reflection and revision during follow-up sessions.

Results from the current study are in contrast to Namugenyi (2019) who conducted a 21-week training programme with Grade 3 teachers in a low socio-economic area of Uganda. This study, similar to the current one, employed a PAR model and used focus groups and observations as data collection methods. Both studies involved a small number of participants from under-resourced contexts where English was the language of instruction but not the learners' home language. Namugenyi's (2019) study demonstrated that the participants improved their use of strategies for teaching reading comprehension. However, Namugenyi's (2019) training programme was more intensive, with the first fifteen weeks dedicated to instruction in the learners' home language and the following six weeks in English.

The theme of revision is supported by the PAR model, which emphasises that CPD should not be a one-time event but an ongoing process. Literature highlights the importance of continuous CPD and mentoring (Geldenhuys & Oosthuizen, 2015; Hasha & Newman, 2021; Wium & Louw, 2012). The researcher argues that review and revision should be integral to CPD events. In the current study, a PAR approach was implemented by collaborating with participants to provide opportunities for reflection in focus groups, demonstrating and applying actions in workshops, evaluating through classroom observations and focus groups, and allowing for modifications through discussions. Figure 8 illustrates how the various events in the study align with the PAR model.

Figure 8

PAR Cycle Throughout the Study



The results of the current study support the importance of the PAR approach when designing CPD events for teachers.

Prior Knowledge

Focus group 2 was conducted six weeks after the second CPD workshop. The purpose of that focus group was to receive feedback on the effectiveness of workshop 2. The theme of *prior knowledge* emerged as one participant recounted:

> *... I learned something, but also I knew some of the things.*

This indicated that the participants were already aware of dyslexia as well as the components of literacy acquisition from their coursework when they were studying for their degrees in education. For example on of the participants indicated that:

> *....after you presented… I realised we had gone through this training [before]. They [university lecturers] will tell [you what to do] but … because with the large groups we never had the time to put [it] into use. But when you brought it up, it was … an easy thing to take to implement, because we [already] knew about it.*

The classroom observations did not clearly distinguish between new practices learned from the CPD workshops and established practices. Participants reported increased confidence in their understanding of literacy acquisition due to exposure to its theoretical foundations. However, they felt unable to apply their learning from their degrees effectively due to contextual constraints, such as large class sizes. These challenges, similar to those identified by Engelbrecht et al. (2015), impacted teachers' ability to create inclusive classrooms. The researcher suggests that ongoing mentorship and support from SLTs could help teachers overcome these constraints and develop more inclusive, dyslexia-friendly practices.

Reliance on Previous Practices

A further theme was that of *reliance on previous practices*. The participants reported that when they begin teaching phonics in Grade 1 (and review in the higher grades as revision

is often needed), the participants did associate letters with the sounds that they make, as well as pictures. For example, one participant stated:

> *... we use the alphabet that has pictures. So we do the letterland and the sound together.*

The above quote demonstrates how the participant was already utilising a multimodal approach by associating a letter with a picture or keyword. The multimodal instructional practices that the participants had already been using included using pictures to aid recall of the letter sounds, and reading and using the targeted sounds in words and sentences (linking the sounds to verbal language). The researcher was able to affirm to the participants that their current instructional practices in that regard were evidence-based.

The participants also reported that they already incorporated many opportunities for review and practice when introducing a new sound in their phonics lesson. For example, one participant stated:

> *We read [the words] on the board. We read them, [the learners] copy them into their vocabulary book. The next day, [we do] the same. Same sound, same words. [Then we draw pictures of the words], draw a shop, draw a shirt, draw whatever, then [write] sentences for them to complete. So we'll read [the words and] use the words in sentences.*

However, the participants did not mention whether opportunities for revision were provided after the target sound was introduced, such as revisiting the sound a few weeks later when a new sound was being introduced.

Another participant reported that she felt frustrated when teaching learners how to blend sounds together:

> *I think [teaching reading] is frustrating because you find the learner who manages to say 'c-a-t' and you say faster. The child says 'c-a-t'. Then you say what's the word? The child says 'fan'...*

The above quote demonstrates how the participant experienced frustration when teaching decoding skills by relying solely on auditory input. In a multimodal approach, the participant may have used the ‘sound dots’ strategy taught in the first workshop, where circles or markers or even dots drawn under each letter or letters representing sounds to provide visual as well as tactile input to support the learner in blending.

Ugwuanyi et al. (2020) conducted a qualitative study using interviews and observations to explore the experiences of primary school teachers in eSwatini working with dyslexic learners. Their study revealed two key themes: negative attitudes towards learners with dyslexia and powerlessness felt by teachers due to a lack of knowledge to support those learners effectively. These findings align with the current study, where a similar sense of helplessness and frustration was expressed by the participant in the quote above, reflecting their difficulties in addressing learners' needs and their perception that the learner could not 'get it.'

Sub-Aim 2: To Describe the Strategies Used to Create a Dyslexia-Friendly Classroom That Promotes Literacy Development

A dyslexia-friendly classroom is an inclusive environment that employs various strategies to enhance cognitive, language, and literacy development, supporting academic success. The use of multimodal strategies has been outlined as an effective strategy for struggling readers. The definition of multimodal, as well as the participant’s understanding and use of multimodal strategies will be discussed below.

Defining Multisensory

The term ‘multisensory’ has more recently been referred to as ‘multimodal’ within the literature. Because ‘multisensory’ was the term used in the study’s surveys, classroom observation checklist, and surveys, the terms 'multisensory’ and ‘multimodal’ are used interchangeably in this chapter. Multimodal approaches have been identified in the literature

as effective for literacy instruction (Rose, 2009; van Staden & Purcell, 2016) and for accommodating diverse learners in the classroom (Clouder et al., 2020; Pace et al., 2019). Consequently, multimodal strategies, along with other literacy techniques, were introduced in the CPD workshops. Prior to the first workshop, participants were asked to define 'multisensory' in a survey to determine their pre-existing understanding of the term and to tailor the workshop content accordingly. Definitions that included the use of more than one sense were accepted. Most of the participants (n=4) did not respond, likely due to a lack of knowledge surrounding the term; however, three teachers (n=3) provided correct definitions. All responses included the concept of using more than one sense.

Use of Multimodal Strategies

When participants were asked if they used multimodal strategies to teach phonics and phonological awareness in the survey administered before the first workshop, many of the participants also did not respond. Table 14 outlines the frequency of the participants' responses to questions regarding their use of multimodal strategies in their instructional practices.

Table 14

The Use of Multisensory Strategies During Literacy Instruction

Questions	Yes (n)	No (n)	No Response (n)
Do you use any multisensory strategies to teach phonological awareness?	2	0	5
Do you use any multisensory strategies to teach phonics?	4	0	3

Note. Based on a total of 7 responses.

The participants' were not aware of the terms 'phonological awareness' (discussed previously) and 'multisensory'. Interestingly, the majority of the participants (n=4) responded that they did use multisensory strategies when teaching phonics.

Participants' Understanding of a 'Dyslexia-Friendly Classroom'

In the survey administered after the second CPD workshop (practical workshop), the participants were asked: *"What does a dyslexia-friendly classroom mean to you?"* The researcher was seeking a definition like the following to demonstrate understanding: A dyslexia-friendly classroom is an inclusive classroom that can help all learners, not just those who battle with literacy. Table 15 provides the responses. These responses revealed that the participants did not have consistent views regarding what constitutes a dyslexia-friendly classroom. The inconsistencies in responses may be because 'dyslexia-friendly' was a new concept that the participants were still coming to terms with. Some participants (n=3) felt that a dyslexia-friendly classroom was an inclusive classroom, while others highlighted the use of multisensory strategies (n=2) and an adapted environmental setup (n=2).

Table 15

Verbatim Responses to "What Does a Dyslexia-Friendly Classroom Mean to You?"

Participant	Participant Response
P1	No response provided.
P2	"Easy for teaching and learning environment."
P3	"It means accepting and understanding of the condition and involving the learners all round."
P4	"A classroom that enables all learners with different abilities to understand concepts taught."
P5	"It means inclusive classrooms that can help learners, not just those with dyslexia."
P6	"It means that I should provide clues like alphabet and numbers."
P7	"Multisensory classroom environment."

Classroom Observation Checklist

The classroom observations were a once-off observation for one hour. A checklist was designed to note the participants' practices during a planned observation of a reading instruction lesson four to six weeks after the second (practical) workshop. The classroom observation checklist was based on the strategies presented and demonstrated during both CPD workshops. These strategies were rooted in the theoretical frameworks of GRR and the AVR model that encompasses executive functions, language comprehension, and word recognition. The AVR recognises that word recognition and language comprehension merge through 'bridging processes' (Jump & Johnson, 2022); however, the researcher did not stick strictly to the components as presented in the AVR and rather used Scarborough's reading rope (a

previous iteration of the AVR model) as an outline for simplicity. The classroom observation checklist can be found in Appendix F. What follows is an outline of the areas covered in the classroom observation checklist:

1. Gradual release of responsibility
2. Executive functions
3. Presentation of information
4. Language comprehension
5. Word recognition

Qualitative field notes were gathered and the checklist was used to measure which strategies were observed within that one-hour lesson. However, it must be considered that it would not have been feasible or possible for the participant to demonstrate all the strategies addressed in the CPD workshops. Six participants (n=6) were each observed in a one-hour literacy lesson and brief feedback was provided after each observation. The checklists were used to observe the participants conducting a lesson and was then analysed to check if there were any points that required further reinforcement. The results of the classroom observations are presented and discussed per each outlined area.

Gradual Release of Responsibility

The GRR model outlines a process of scaffolding in instruction where the teacher initially models the task for the learners and gradually shifts responsibility for learning over to the learners. As learners progress through the model's four stages, they become increasingly independent and less reliant on the teacher's guidance (Collet, 2015). Figure 9 demonstrates the frequency of observed use of the different stages of the GRR during the classroom observations.

Figure 9

Frequency of Participants where GRR Strategies Observed

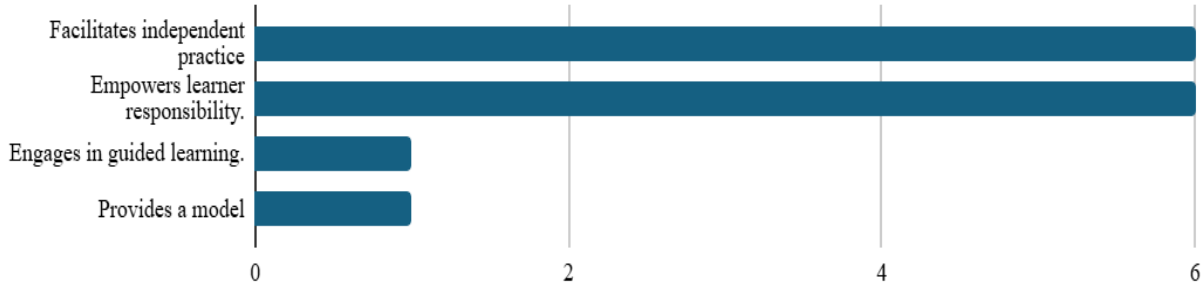


Figure 9 demonstrates that not all participants began by modelling expectations or engaging in guided practice. Most (n=2) provided instructions and allowed learners to practice independently, offering guidance only when learners struggled, which still left learners heavily dependent. Clark (2014) notes that classroom confusion often arises when teachers skip one of the middle stages of the GRR model. Shanahan et al. (2019) found that in-service training helped experienced teachers view the GRR model as cyclical and flexible rather than linear and static. This training, conducted over two years, enabled teachers to apply the GRR model abstractly due to their prior experience. However, participants in the current study lacked experience with the GRR model. Despite the researcher following the GRR model in the practical CPD workshop, this exposure was insufficient for participants to effectively implement the gradual release of responsibility in their lessons.

Executive Functions

Executive functions are higher-order cognitive skills essential for managing complex, goal-directed tasks like reading (Cartwright et al., 2020). Recent studies highlight their significance in predicting reading comprehension (Kieffer & Christodoulou, 2020). While the literature varies on the specific processes considered as executive functions, three core dimensions are most commonly cited: working memory, attention shifting, and inhibitory control (Kieffer & Christodoulou, 2020). Figure 10 demonstrates the frequency of observed

use of strategies for each of the three most critical executive functions related to reading comprehension. Figure 10 shows that some participants (n=3) prompted their learners to restate the goals of the lesson. Posting the goals of the lesson in multiple ways and in obvious places was observed as a strategy used minimally.

Figure 10

Strategies to Engage Working Memory

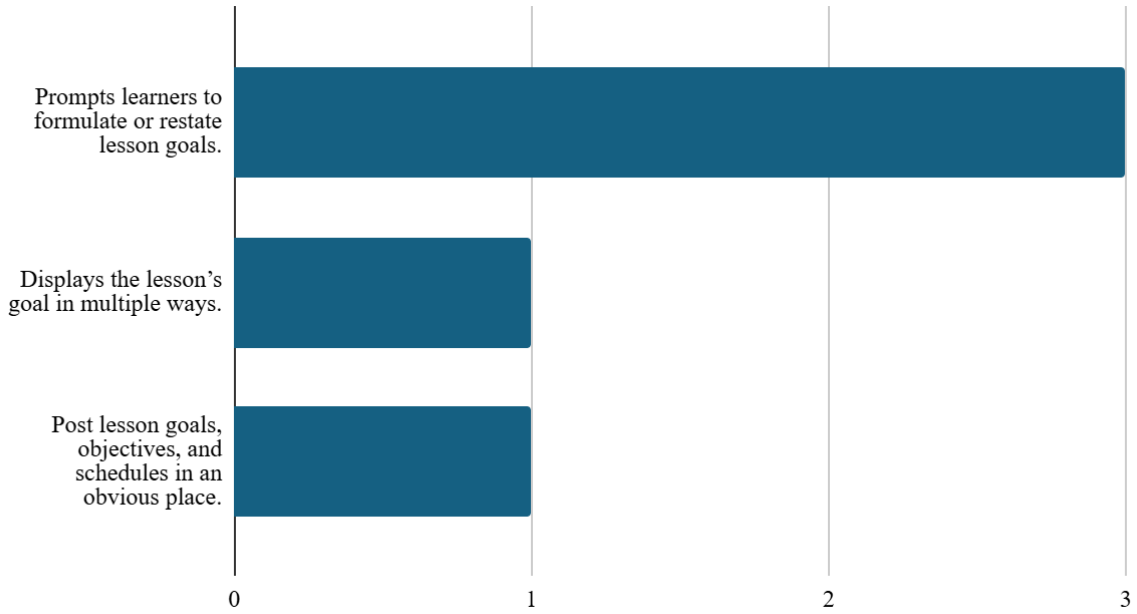


Figure 11 demonstrates that the majority of the participants (n =5) had established class routines, for example, a song to draw the learners' attention that the lesson was now beginning. However, this was an existing practice of the participants.

Figure 11

Strategies to Engage Learners' Inhibitory Control

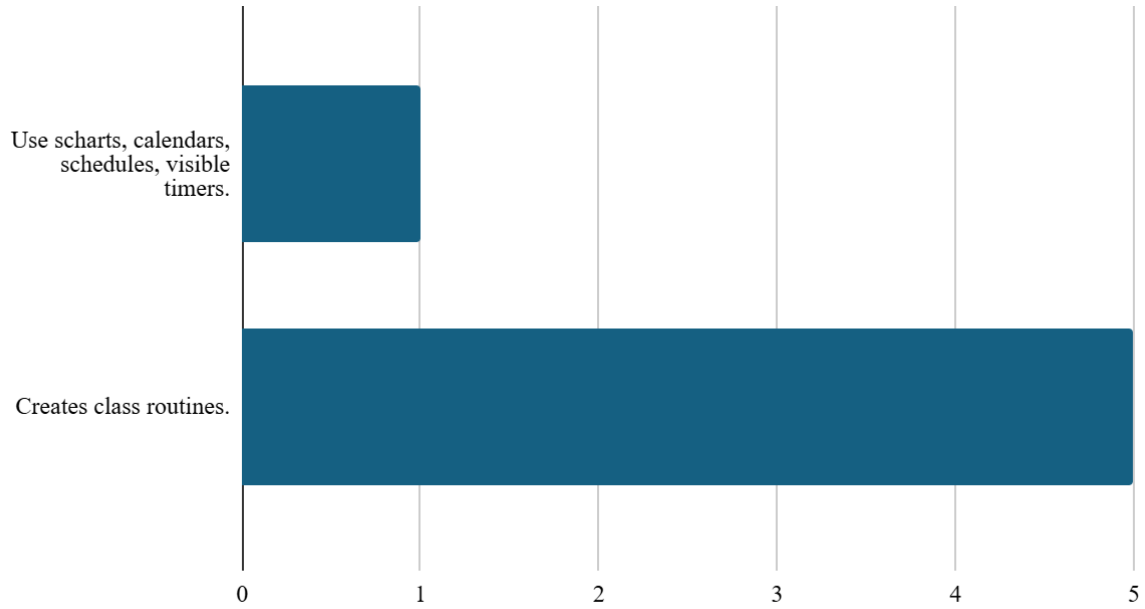
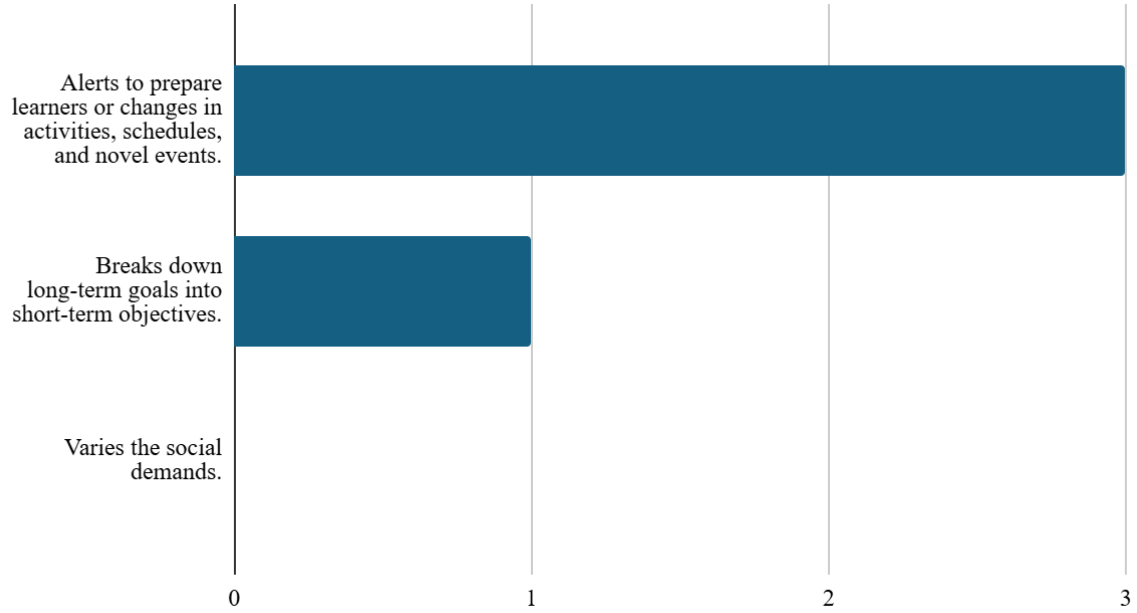


Figure 12 illustrates that some (n=3) participants verbally alerted their learners that a transition would be occurring, but they did not use visual timers or schedules to aid in this transition. No participants were observed to vary the social demands of the learners, as it was often observed that the participants called upon learners to answer a question in front of the whole class. Overall, limited strategies to support the executive functions of the learners were employed by the participants.

Figure 12

Strategies to Engage the Learners' Ability to Shift Attention



Spencer et al. (2020) conducted a quantitative study with learners between 9 and 14 years of age to study the relationship between reading comprehension, word decoding, oral language, and executive functions. Those authors found that executive functions are linked indirectly to reading comprehension via verbal language skills and word decoding (Spencer et al., 2020). They recommended that an executive functions component should be incorporated within reading comprehension interventions (rather than targeting executive functions in isolation).

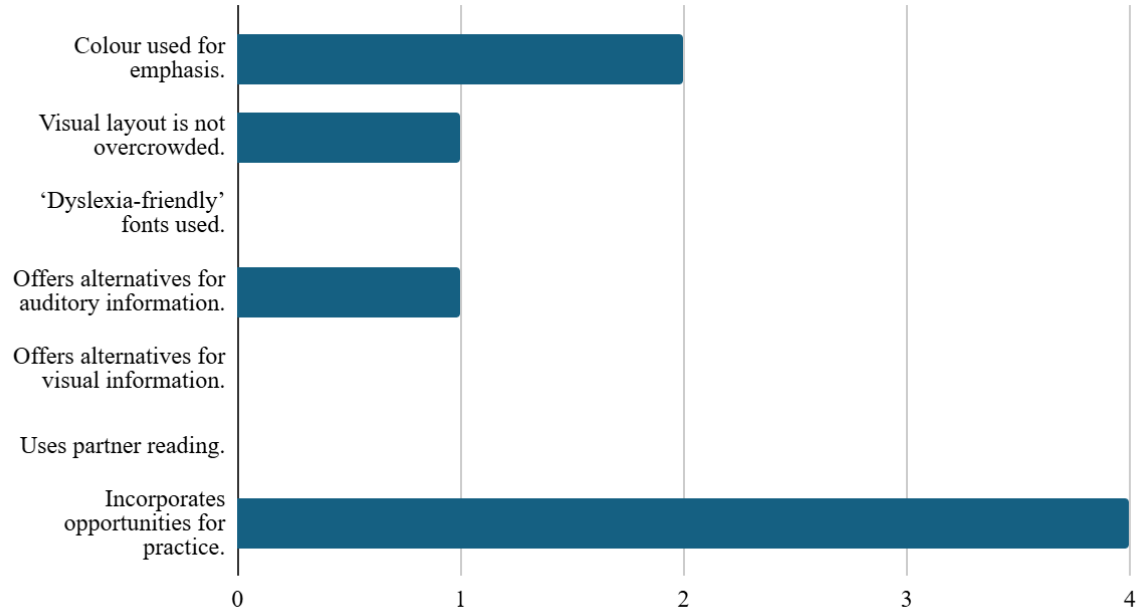
Executive functions have been outlined in the literature as greater predictors for reading comprehension over word decoding and verbal language skills (Spencer et al., 2020). Thus, engaging the learners' executive functioning skills (as part of the active self-regulation of the learners) is paramount when teaching reading comprehension.

Presentation of Information

The way that information is presented to learners who battle with literacy is crucial. Information should be represented in multiple ways, using multimodal approaches that have been shown to be an effective practice in the inclusive classroom. Figure 13 demonstrates the ways that the participants presented the information they were teaching to their learners.

Figure 13

Presentation of Information



As shown in Figure 13, the majority of the participants (n=4) did incorporate revision and practice opportunities from concepts they had targeted previously. 'Dyslexia-friendly' fonts used for printed materials could not be observed because the participants did not use printed worksheets or reading passages. Rather, participants wrote on the board. When the participants did provide printed sheets, they were alphabet letters printed for each child to keep. No participants used alternatives for visual information; this is likely due to the resource-constrained setting that the participants were practicing in

Sutton and Shields (2016) outlined strategies for presenting information to dyslexic learners, which were included in the classroom observation checklist. These strategies include using dyslexia-friendly fonts, avoiding overcrowded visual elements, and using colour for emphasis. Two participants (n=2) applied different colours to highlight targeted spelling patterns on the board. However, all participants (n=6) wrote on the board while speaking, rather than using other audio-visual tools or worksheets. Further, limited board space posed a challenge. One participant, who shared a classroom, had access to only half of the blackboard. No partner reading was observed as no learner reading tasks were conducted. The concept of offering alternatives for visual and auditory information was drawn from the UDL (CAST, 2018), discussed further in the conclusion. UDL aims to ensure access for learners with diverse needs (Lindner & Schwab, 2020), and its emphasis on offering multiple formats for information aligns with the principles of multimodal instruction, which involves presenting information through more than one modality simultaneously.

Language Comprehension

Language comprehension includes background and content knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge (Jump & Johnson, 2022). It is a vital component on the journey towards reading comprehension. Table 16 shows that few language strategies from the CPD workshops were applied during the classroom observations. This aligns with survey responses where participants demonstrated knowledge of phonics but did not mention executive functions or language skills. Similarly, focus group discussions revealed a need for more input on learners' understanding, reading comprehension, and behaviour. Notably, no participants were observed reading text aloud to learners during lessons.

Table 16

Frequency of Classrooms where Language Comprehension was Facilitated

Domain	Practice	Frequency (n)
Background Knowledge	Pre-teaches vocabulary by tapping into learners' experience.	2
	Anchors instruction by linking to prior knowledge.	2
Vocabulary	Defines new words for learners	1
	Categorises new words into nouns, verbs or adjectives/adverbs by using colour.	2
	Embeds visual, non-linguistic support for vocabulary clarification.	2
Language Structures	Uses new words verbally in sentences.	2
Verbal Reasoning	Reads aloud to the learners - talks about the story before, during and after reading aloud.	0
	Uses 'think alouds'.	0
Literacy Knowledge	'Chunks' information into smaller elements.	1
	Prompts the use of mnemonic strategies and devices (e.g., visual imagery, paraphrasing strategies).	0

Awada and Plana (2018) found that teachers in Lebanon had mixed perceptions of language comprehension strategies used with dyslexic learners. However, in the current study, participants did not express any positive or negative views about the language comprehension strategies in surveys or focus groups. Despite participants specifically requesting that comprehension be addressed in the CPD workshops, these strategies were not observed in their

teaching practices. This suggests that the CPD workshops may have covered too much content in too short a time, and that contextual constraints, such as timing and resources (discussed further in this chapter), hindered the effective transfer of knowledge from the workshops to the classroom.

Word Recognition

Word recognition includes phonological awareness, decoding, and sight word recognition (Nation, 2019). The language patterns needed for word recognition include the recognition of sounds, letters, and letter-sound correspondences (Willis, 2008). Table 17 demonstrates that four (n=4) participants linked letters and sounds in phonological awareness. In decoding, three participants (n=3) highlighted vowels or known spelling patterns. For sight word recognition, two participants (n=2) used word walls. It was disappointing to not observe many other strategies. This differs from the results of Namugenyi (2019), who conducted a twenty-one week training programme with Grade 3 teachers in a low socioeconomic area of Uganda, aimed at implementing a balanced reading programme for bilingual learners. Although the study used a PAR model and similar data collection methods to the current research, it differed in its intensity and duration. The training included fifteen weeks of instruction in the learners' home language, followed by six weeks in English. Unlike the current study, Namugenyi's (2019) participants showed improved use of reading comprehension strategies.

Table 17

Word Recognition

Domain	Practice	Frequency (n)
Phonological awareness	Targets/links letters and sounds.	4
	Targets rhyming words; segmenting words into syllables or words into sounds; blending syllables into words or sounds into words using tactile, auditory, visual, and kinaesthetic modes.	0
Decoding	Uses sound boxes to aid in sounding out the word whilst reading or spelling.	0
	Highlights differentiate vowels and/or known spelling patterns.	3
	Associates a letter to a visual AND a keyword AND a kinaesthetic experience.	0
Sight word recognition	Uses word walls.	2
	Practices sight words using tactile, auditory, visual and kinaesthetic modes.	0

Sub-Aim 3: Challenges to Creating a Dyslexia-Friendly Classroom

In the first survey, prior to the first workshop, the participants were asked about the difficulties that they experienced when teaching literacy skills in their classrooms (See Table 18); the support they received from their school and how they currently assist learners who battle with literacy. This was to gain insight into the resources that they do have available to them and their current intervention practices to assist with planning for the theory workshop and practical workshop.

Table 18

Difficulties Experienced by Participants When Teaching Literacy

Participant	Response
P1	"Learners struggle to read and comprehend."
P2	"Difficulties in reading after sounding the letters."
P3	"Children who tend to be forgetful in all ways."
P4	"Having to explain each and every new word before most learners grasp their meaning."
P5	"Learners have challenges blending sounds to make words and constructing sentences."
P6	"Writing and reading."
P7	"Learners struggle to identify beginning sounds, middle and ending sounds of 3 letter words."

Some of the participants (n=3) reported that learners had difficulty with their *phonological awareness skills*; followed by learners' difficulties with *language* including comprehension and vocabulary (n=2). One participant (n=1) reported learners' *memory* as a challenge (working memory is an executive function; a concept that was taught and provided compensatory strategies for in the workshops). Interestingly, these were responses on the first survey administered prior to the first workshop before the participants were exposed to the AVR model. Phonological awareness skills, language skills, and working memory are areas that influence and impact the skill of reading comprehension. The areas of word decoding, language comprehension as well as executive functions were targeted in the workshops as these areas are all part of the AVR model.

All participants (n=7) reported difficulties they perceived as intrinsic to the learner, such as the learners' skills, without mentioning any systemic or environmental factors as challenges. This aligns with Engelbrecht et al. (2015) whose study with South African teachers found that they also viewed barriers to learning as intrinsic to the learners. Like the current study, Engelbrecht et al. (2015) highlighted how contextual challenges influenced teachers' understanding of learning barriers and their use of classroom strategies. Engelbrecht et al. (2015) further noted that due to the medical-model and deficit-based approach ingrained in teachers during their pre-service training, their classroom practices were not fully inclusive. Similarly, the researcher of the current study suggests that the participants' focus on learner-specific challenges, combined with contextual factors, may hinder the effective implementation of dyslexia-friendly and inclusive strategies.

It is notable that all participants in this study identified learner-centred challenges when teaching literacy skills, focusing on areas within the learners themselves. This differs from Matlebjane's (2021) findings, where South African teachers highlighted time management, classroom management, and lack of resources as key challenges when supporting dyslexic learners. The participants in the current study may have focused on learner-centred skills because the workshops emphasised strategies to assist learners struggling with literacy. Although the AVR centres on the skills necessary for successful reading comprehension, the workshops also provided theoretical background and demonstrations of the GRR model, a method teachers would implement during instruction.

Support Received from the School

The participants' responses were divided on whether they received support from their school in developing lesson plans for teaching literacy. Regarding available materials, most participants (n=3) reported having access to stationery and visual aids like charts and posters, while two participants (n=2) mentioned having audiovisual equipment such as overhead

projectors and speakers. These responses differ from Matlebjane's (2021) findings, where teachers reported a lack of proper resources for teaching children with dyslexia. Despite this, the teachers in that study were resourceful, adapting their tasks and presentation to be more inclusive by incorporating colour as well as auditory and visual cues.

Assistance Available for Learners Who Battle with Literacy

Most participants (n=6) reported offering extra lessons to assist learners with literacy difficulties, and two (n=2) referred learners to a private educational psychologist. Although SLT students visited the school weekly as part of their practical training, the participants did not mention these students as a resource, possibly due to a lack of awareness of the SLTs' role in literacy development or dyslexia intervention.

The support participants provided directly was primarily through extra lessons, which all participants offered. However, there was no evidence that they received direct support from their school, either through CPD activities (other than the current study) or access to specialist professionals. School support can significantly influence teachers' perceptions of CPD activities (Geldenhuys & Oosthuizen, 2015) and the effectiveness of a dyslexia-friendly classroom (Alnaim, 2023). Therefore, it can be assumed that the level of support provided by the school would impact the participants' views of the CPD workshops and their ability to continue applying the principles learned in the future.

Qualitative Findings

The qualitative results will now be presented and discussed in relation to themes that emerged from *challenges to creating a dyslexia-friendly classroom.*

Challenges to Creating a Dyslexia-Friendly Classroom

The challenges experienced by the participants when setting up a dyslexia-friendly classroom were contextual constraints. These included challenges regarding participant motivation, English language proficiency, learner behaviour, and school resources.

Participant Motivation

The first focus group was conducted one week after the initial workshop. During this session, participants demonstrated minimal engagement when asked direct questions about the workshop content, such as defining dyslexia, identifying specific learning disorders, and discussing the skills required for literacy beyond word recognition. This low level of engagement contrasts with their responses in the first survey, where most participants indicated an understanding of the term 'dyslexia.' Several factors may have influenced their engagement during the focus group, including motivation, external challenges, and varying levels of English language proficiency. Despite these challenges, the PAR approach supports ongoing review and revision, which emphasises the cyclical process of reflecting on, evaluating, and adapting instructional practices.

This finding mirrors the results of Geldenhuys and Oosthuizen (2015), who conducted a qualitative study on the challenges faced by teachers in CPD. Their research, which involved questionnaires and interviews with South African foundation-phase teachers, revealed varied levels of motivation towards CPD. Additionally, one participant mentioned needing to leave the workshops early to secure transportation home, as she lived far away and the workshops were scheduled after school hours:

> *Ma'am, two hours is a lot, I'm staying very far and I'm using taxis.*

The timing of the workshops affected this participant's motivation to attend. According to Knowles' (2014) theory of andragogy, a participant's readiness and motivation to learn can be

influenced by external circumstances; this participant could not be oriented towards learning as she was concerned about circumstances outside of her control (relying on public transport), impacting on how late she would get home that evening.

Timing was also a factor in the participants' ability to focus on and implement the strategies taught during the workshops. When asked during the second focus group how they were able to apply the strategies taught in the workshops, one participant responded:

So unfortunately, this week since [we had] assessments. So we didn't apply much.

Due to the time in the term when the participants were administering assessments to their learners, they felt unready to implement the knowledge acquired in the workshops. Likewise, when asked if the participants were able to watch brief videos demonstrating the concepts taught in the workshops, one participant responded:

No, the problem is time.

and

Because we are busy at school.

The videos, which were brief clips from YouTube (each less than five minutes long), were used to clarify concepts from the first workshop, such as executive functions and the AVR. Effective teacher development involves teachers participating in the planning, implementation, and evaluation of CPD programmes (Geldenhuys & Oosthuizen, 2015). While the researcher made efforts to involve teachers in the planning of the workshops, only the timing of the workshops was discussed with the principal. As a result, the researcher did not fully understand the participants' pressures related to learner assessments and marking.

Participant English Language Proficiency as a Challenge

The participants' varying levels of English language proficiency likely affected their ability to respond effectively to written survey questions and to participate in verbal discussions during the focus groups. For instance, in the second survey (post-workshop survey 1), participants were asked the following after being introduced to the AVR model: "What skills do learners need to learn to read, write, and spell?" Three responses were insufficiently detailed to be considered correct. While the question referenced both reading and spelling, some answers included terms like "decoding," which is related to reading, but did not fully address the question, or "spelling," which was not a relevant answer. The teachers' English comprehension issues, potential fatigue, and low motivation may have contributed to these inadequate responses. This is similar to the results of a two-year longitudinal teacher training study conducted by Wium and Louw (2012) where language proficiency was also identified as a critical factor for successful teacher CPD.

Learner Behaviour

As previously discussed in the qualitative findings of this chapter, the participants felt that the difficulties their learners faced were largely behavioural and innate to the learners. The participants verbalised that behaviour and demotivation of the learners were challenges for them. When collaborating with the participants regarding topics they wanted addressed in the next CPD workshop, one participant requested assistance with learner behaviour in terms of refusal to read that may have been an underlying anxiety with reading:

> *I need help, how to help a learner… I classify them as a refusal to read. One that just stands there, you point, the child just keeps quiet.*

When the researcher provided some thoughts on strategies that the teacher could implement, she responded:

> *But they just keep quiet [when] you say the word and then they just look at you.*

Another participant stated:

> *How [should I] handle a disruptive learner? [When they are] talking when they are not supposed to be talking.*

Another participant added:

> *They want the attention of the teacher… And you find that learner knows what he or she was supposed to do, but is just disruptive.*

The participants' attitudes towards their learners' abilities appeared to be negatively skewed, as they attributed literacy difficulties to the learners' low motivation and behaviour. This suggests that the participants viewed their learners' barriers to learning as internal and innate to the learner, and thus through a deficit-based perspective. Local research has cited learner behaviour as a challenge to teaching, which is frequently cited by teachers (Engelbrecht et al., 2015; Leseyane et al., 2018; Ugwuanyi et al., 2020). Engelbrecht (2015) found that teachers' pre-service training, which was rooted in a medical-model and deficit approach, influenced their instructional practices with diverse learners. Negative attitudes towards learners with barriers to learning are not uncommon findings in the local research. Ugwuanyi et al. (2020) found that the teachers in their study had negative and unwelcoming attitudes towards learners with dyslexia. Likewise, Leseyane et al. (2018), in their qualitative study voicing the experiences of dyslexia learners in South African schools, found that dyslexic learners felt neglected by their teachers. Although the learners in the current study were not identified as dyslexic, the participants did identify some of the learners in their class as having literacy difficulties. The attitudes of the participants towards literacy difficulties and their learners whom they viewed as disruptive likely impacted how the strategies were perceived and utilised by the learners themselves.

School Resources

The school that the participants taught at was a private school in a peri-urban, low-resource area in Yeoville, Johannesburg. There was a dearth of resources allocated to the participants in terms of teaching materials, technologies, and space. The participants did have access to a colour printer from which they could print resources. It was noted during the classroom observations that all of the participants wrote on the blackboard while speaking, rather than using other audio-visual tools or worksheets and limited board space posed a challenge. One participant, who shared a classroom, had access to only half of the blackboard. The classrooms were physically small and the learners' desks were arranged in an efficient way, but the classrooms felt cramped and one could not move around easily. The study was conducted over the winter period and there was no indoor heating so the children stayed in the classroom during their lunch break as it was too cold to play outside. This likely impacted the learners' executive functions and motivation, which in turn likely impacted on the participants' resilience towards learners' perceived negative behaviours. Large classes, lack of resources, insufficient facilities, and being under-trained are some of the challenges that South African teachers still face today in the aftermath of Apartheid (Wium et al., 2010).

This finding is consistent with Engelbrecht et al. (2015), who conducted a qualitative study on South African teachers' understanding of learning barriers and its impact on their inclusive practices. Engelbrecht et al. (2015) found that teachers faced systemic challenges, such as the ethos of the school and the educational system's approach to inclusion as well as external constraints like funding and overcrowded classrooms, which hindered their ability to implement inclusive practices.

Sub-Aim 4: To Describe the Participants' Perceptions on the Role of the SLT in Supporting Teachers During Literacy Instruction

Participants' Perceptions on the Efficacy of CPD Workshops

The literature highlights the need for SLTs to collaborate with teachers to enhance literacy instruction and support dyslexia-friendly practices both locally and internationally (Dalton et al., 2012; Geertsema & Le Roux, 2020; Lindner & Schwab, 2020; Wium et al., 2010). As an SLT, the researcher aimed to respond to this call by evaluating teachers' perceptions of the effectiveness of the CPD workshops. Table 19 presents the participants' responses from the third and final survey conducted after the second (practical) workshop.

Table 19

Participants' Perceptions of Their Skill Improvement Following the CPD Workshops (N=6)

Question	Frequency of 'Yes' Responses
Were you able to apply what you had learned in the workshops in your classroom?	6
Are you confident in your ability to apply your knowledge learned in the workshop?	6
Did the mentoring help you apply the knowledge you learned in the workshops?	6

Table 19 demonstrates that all participants (n=6) reported feeling confident in their ability to apply the knowledge gained from the CPD workshops and found the mentoring aspect to be beneficial. These findings align with those of Namugenyi's (2019) study, discussed earlier in this chapter, where teachers' confidence in their instructional practices improved following CPD events that included mentoring. Both the current study and Namugenyi's (2019) research support the growing consensus in the literature that mentoring should be an integral component

of CPD for teachers (Collet, 2015; Geldenhuys & Oosthuizen, 2015; Hasha & Newman, 2021; Meiklejohn et al., 2021; Wium & Louw, 2012).

In this final survey, participants were asked, "Did the workshop on how to set up a dyslexia-friendly classroom help you when teaching literacy?" Content analysis of their responses revealed that some participants (n=3) found the workshops beneficial for improving their skills in supporting learners with specific needs. This is congruent with the South African literature's call for teachers to receive further training in special needs education (Makgato et al., 2022; Masalesa et al., 2019; Thompson, 2013). However, one participant (n=1) reported facing resource challenges when trying to create a dyslexia-friendly classroom. Resource limitations as a barrier to establishing inclusive and dyslexia-friendly classrooms are well-documented (Engelbrecht et al., 2015; Geldenhuys & Oosthuizen, 2015; Masalesa & Dube, 2019; Matlebjane, 2021; Thompson, 2013). These findings align with existing literature, which highlights the effectiveness of CPD in improving learner performance (Conn, 2017; Hasha & Newman, 2021; Meiklejohn et al., 2021).

Participants were also asked, "What was most helpful about the workshop?" Content analysis of their responses revealed that most participants (n=4) found the CPD workshop beneficial for enhancing their knowledge and providing strategies, including multimodal approaches, to support learners with literacy difficulties. These responses align with their answers to the previous question. Other studies have similarly found CPD workshops to be valuable and effective for teachers (Namugenyi, 2019; Shanahan et al., 2019; Wium et al., 2010), although some research has reported mixed results regarding the efficacy of such workshops (Awada & Plana, 2018; Wium & Louw, 2012). These mixed findings are consistent with the current study, where some participants experienced more benefits than others.

Participants' Perceptions of the Learners' Responses to Literacy Strategies

In the third and final survey administered after the second workshop, the participants were asked, "How did your learners respond to the different strategies you applied over the past 6 weeks?" Their verbatim responses are outlined in Table 20.

Table 20

Verbatim Responses Regarding Learners' Response to Literacy Strategies (N=6)

Participant	How did your learners respond to the different strategies you applied over the past 6 weeks?
P1	"They responded [positively]."
P2	"Those who had challenges in sounding and reading words have improved a lot."
P3	"Learners showed interest in pictures and colourful learning aids used and most of the concepts taught were understood."
P4	"It was helpful to some learners but some learners are still struggling."
P5	"They benefited a lot and they seem to enjoy reading the short texts that are given to them."
P6	"They responded quite well. The learners loved the clapping when reading new words."

Content analysis of the participants' responses revealed that most (n=5) felt their learners responded well to the literacy strategies, while one (n=1) participant noted mixed results in her class. These findings align with Alnaim's (2023) study, which reported largely positive perceptions among teachers implementing dyslexia-friendly classrooms, despite some challenges. However, it is important to note that Alnaim's (2023) study was conducted in Saudi Arabia, a developed country with presumably more resources available to address the contextual challenges teachers may face when creating dyslexia-friendly classrooms.

Two participants (n=2) observed that their learners responded particularly well to multisensory strategies, such as using pictures and clapping words into syllables. This aligns with existing literature, which consistently identifies multisensory (also known as multimodal) instruction as an effective and efficient method for teaching literacy to all learners, whether struggling or not (Clouder et al., 2020; Pace et al., 2019; Reid, 2011; Rontou, 2021; Rose, 2009; van Staden & Purcell, 2016). Learners respond well to multimodal strategies because of the way that the brain is wired. For example, humans tend to perceive speech more accurately when they can both see and hear what is being said, such as observing lip movements while listening (Zhou, 2021). Additionally, motor areas of the brain become activated when speech involves physical actions. Zhou (2021) further highlights that multimodal instruction is particularly engaging and motivating for learners. This connection aligns with the AVR model, which emphasises that motivation and engagement (which are key components of active self-regulation) are essential for reading comprehension, alongside word decoding and verbal language skills.

Researcher's Reflective Notes

Reflections on the Workshops

The researcher felt that the participants did defer back to a dependent learning style in the first workshop. During the second workshop, which was more practical, where the participants used simulated experiences to practise the provided strategies on eachother. I'm unsure if the dependant learning style was due to a potential language barrier. In the first focus group, the participants gave one word answers, and didn't participate without the researcher coaxing them.

Upon reflecting, the researcher had assumed that since the participants had been exposed to the terminology relating to the active view of reading in the first workshop, that they would use that terminology, for example, word decoding, phonological awareness, relating to language skills. However, two workshops was not enough exposure to the new vocabulary.

Reflections on the Focus Groups

The researcher felt that the focus groups allowed the teachers to ask clarifying questions. Having met with the researcher once, twice, or even three times before (during the first workshop, the first focus group, and the second CPD workshop), they felt comfortable and expressed themselves more openly regarding real-world issues that they faced in their classrooms.

During the focus groups, the researcher provided much of repetition and re-explaining from the previous workshops. Initially because the participants were unable ot respond to the researchers' questions gaging comprehension and retention of the information presented in the CPD workshops. The teachers were more open and willing to ask specific questions relating to creative writing and learner behaviour, which they expressed as immediate needs for them to receive input on.

Reflections on Classroom Observations

During the classroom observations, the participants were comfortable with using multimodal strategies during phonics instruction. Some participants incorporated multisensory strategies in phonological awareness instructions. Some participants did link their word decoding instruction to language but this area could have been targeted further as the participants had stated that learner comprehension skills was a challenging area for them. However, the participants' English language skills were weak as demonstrated in their

responses to survey questions; their verbal sentence structure in the focus groups and their pronunciation of letter sounds during the classroom observations.

Chapter 5: Conclusion

This chapter will conclude the study by summarising the key results in relation to the main aim of the study and the implications thereof. This chapter will also review the limitations of the study and propose directions for future research.

Summary of Findings

The primary research question that guided this study was as follows: *Is teacher training on how to set up a dyslexia-friendly classroom effective for teachers?* In brief, the research question was answered, and that answer is "*not yet*". While there is significant potential for dyslexia-friendly classrooms to support diverse learners, as evidenced by research from developed countries, implementing this approach in the South African context presents considerable challenges, especially in low-fee schools.

The study's key findings revealed inconsistent benefits from the teacher training, along with significant challenges in establishing a dyslexia-friendly classroom. The researcher initially hypothesised that the multiple CPD workshops, conducted over time and including a mentoring component, would enable participants to successfully create dyslexia-friendly classrooms. However, the results aligned with previous South African studies on teacher training (Engelbrecht et al., 2015; Geldenhuys & Oosthuizen, 2015; Wium & Louw, 2012), which found similar challenges that hindered teachers from effectively applying the knowledge gained from CPD events. These challenges included lower teacher motivation regarding CPD engagement, teacher English language proficiency difficulties, viewing barriers to learning as intrinsic to the learners, and a lack of resources.

However, the results of the study hold potential as the participants' perceptions of their knowledge and skills related to literacy strategies and implementing a dyslexia-friendly

approach improved following the CPD workshops. This suggests that SLTs can play a valuable role in enhancing teachers' literacy instruction.

Contributions of the Study

Practical Contributions

Regarding the literacy strategies taught in the workshops, some participants implemented more strategies than others. The strategies with inconsistent application across the participants included the use of multimodal strategies within the AVR model. These included strategies to engage the learners' executive functions, bridging processes, and language comprehension. Many participants were already focusing on word recognition strategies when teaching literacy. This mirrors the findings of Wium et al. (2010), where certain teachers benefited more from CPD training provided by a researcher (who was an SLT) than others. The use of the AVR in intervention studies is still in its infancy, so this study adds to the beginnings of evidence regarding the implementation of the AVR model during literacy instruction.

The findings indicate that the participants' ability to engage in CPD was impeded by external factors such as the participants' motivation, English language proficiency, perceived learner behaviour, external constraints, and resource constraints. Participants struggled to implement new strategies, particularly during busy assessment periods. Their negative perceptions of learner behaviour, often attributed to deficits intrinsic to the learner, further complicated their efforts. These challenges highlight the critical impact of systemic constraints, such as resource limitations and language barriers, on teachers' ability to participate in professional development and effectively manage diverse classroom needs. However, the participants perceived the CPD workshops as being beneficial to their instructional practices regarding literacy.

The study achieved its aim by contributing to the literature regarding the use of more effective and efficient inclusive practices within the South African context. The findings align with previous South African research, which highlights significant challenges in implementing inclusive practices due to various constraints. The study supports the need for SLTs to assist teachers with literacy instruction because the researcher, as an SLT, developed both theoretical and practical workshops on literacy and classroom strategies, along with a checklist for observing the application of these strategies in the classroom. It is recommended that SLTs within the education sector support teachers in their classrooms by conducting regular CPD events and setting up a mentoring situations with and also between teachers, so as to support teachers in setting up neurodiversity-affirming classrooms.

Contributions to Research

This study demonstrates that a PAR approach is essential when setting up CPD events for educators and reiterates findings from studies already conducted. Specifically, CPD events should not be once-off, should contain a mentoring competent, and that the teachers themselves should be actively involved in the planning of CPD events.

Structured literacy, a systematic and explicit approach to literacy instruction, has been recognised as an effective method for supporting learners with barriers to learning (IDA, 2019). This evidence-based approach could be strategically implemented in South African primary school classrooms to directly target literacy skills.

Implications

A dyslexia-friendly approach is inherently inclusive, but the term 'dyslexia-friendly' can be misleading as it may suggest benefits are limited to learners struggling with literacy. This approach supports all learners, including those who are typically developing. The researcher moves to begin using the term ‘neurodiversity-affirming’ to refer to inclusive

practices in classrooms and schools. The link between a neurodiversity-affirming approach and a dyslexia-friendly approach has not been made clear in the literature. The researcher argues that these approaches are synonymous. Neuro-affirming, neurodiversity-affirming, and neurodiverse-friendly are synonymous terms referred to in the literature when referencing inclusive approaches used in the classroom or the wider context of schools or universities. Teacher training in literacy development and the implementation of dyslexia-friendly and neurodiversity-affirming practices should incorporate strategies to support learners' executive functions, as recommended by Spencer et al. (2020). Neurodiversity-affirming approaches are closely aligned with the principles of UDL, indicating a potential synergy between the two frameworks. Rooted in a neurodiversity-affirming perspective, UDL principles are designed to benefit all learners, not just those who face specific challenges (Brandsen et al., 2024; Clouder et al., 2020; Pace et al., 2019).

Limitations of the Study

The limitations of the study will be addressed, including language barriers, the researcher's experience and data collections challenges. The sample size will also be discussed as an area of consideration, rather than a limitation.

Language Barriers

The participants' English language skills were weak. This was apparent in their survey responses, verbal sentence structure during focus groups, and pronunciation of letter sounds observed in the classroom. Despite working at a school where English is the language of learning and teaching (LOLT), the participants' proficiency in English was limited. The school's learner population included many immigrants to South Africa, resulting in a diverse linguistic environment that prevented the participants from relying on a common language.

Data Collection Challenges

The timing of the CPD workshops and focus group discussions, which were scheduled

after school hours, affected participants' motivation due to their fatigue by the end of the day. Additionally, the duration of the CPD workshops (two hours) and focus groups (one hour) was challenging for participants, who relied on public transport.

Participants also reported that the timing within the school term was inconvenient, as they were overwhelmed with learner assessments and marking. This limited their opportunities to apply the literacy strategies introduced in the workshops. It is hypothesised that ongoing revision and support, through mentoring, could improve the application of these strategies and enhance dyslexia-friendly and neurodiversity-affirming practices.

Furthermore, the study's ten week duration was relatively short. The literature suggests that teacher training needs to span at least two years to have a meaningful effect (Meiklejohn, et. al., 2021; Shanahan, et. al., 2019; Wium, et. al., 2010).

Sample Size

Although the sample size was small (n=6),the results nonetheless provide useful insights into teacher training. The qualitative nature of the study provided a deeper and richer understanding of participants' experiences. The researcher combined basic quantitative methods and qualitative methods as a way of triangulating the data to create more rigorous findings.

Future Directions for Research

To address the limitations of the study as described above, and to outline the recommendations from the literature, the recommendations for future studies are recommended here.

Extended Duration and Mentoring

Future studies on teacher trainings should be conducted over a period of two years, with a mentoring component, as outlined in the literature (Geldenhuys & Oosthuizen, 2015; Hasha & Newman, 2021; Namugenyi, 2019; Shanahan et al., 2019; Wium & Louw, 2012). Mentoring

could be in the form of group mentoring so that all participants could share their experiences, difficulties and successes in setting up a neurodiversity-affirming classroom. Although this study did not take place over two years, future studies could take place over a longer duration, or the participants could be interviewed again two years after the study.

Approaches

Multimodal instruction, structured literacy and the UDL are recommended as approaches to be further investigated in the context of the South African classroom as they can all be cost-effective and low-resource approaches to follow. Future studies should look at the changes in learners' literacy scores over time when these approaches are applied in a neurodiversity-affirming classroom.

Conclusion

This study investigated the efficacy of teacher training to set up a dyslexia-friendly classroom. A dyslexia-friendly classroom, approach, and school are terms that have been used widely in the literature and have been found to be an effective and efficient way to help all learners, not just those who battle with literacy and other academic aspects. The results of the current study hold potential in that the participants perceived their knowledge and skills surrounding literacy strategies and setting up a dyslexia-friendly classroom to improve following the workshops. However, challenges when implementing dyslexia-friendly practices remain and are like the challenges facing South African teachers, which have already been explored widely in the research. This study adds to the body of research exploring the most efficient and effective way to address the low literacy levels in South Africa. SLTs have the expertise in the areas pertaining to literacy development and should support teachers when teaching literacy skills. Training teachers to set up a dyslexia-friendly classroom to help all learners develop literacy skills need not require a large budget or the use of technology. Given the illiteracy levels in

South Africa, as well as the fact that there is a shortage of SLTs, training teachers to implement strategies to develop literacy skills means that the most learners can be reached.

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Appendices

Appendix A: Pre-Workshop Survey

- Thank you for taking the time to complete this survey.
- The purpose of this survey is to understand what you as a teacher would like to learn about most when it comes to teaching literacy (reading, writing, spelling), and language-based learning disorders such as dyslexia.
- Please be as thorough as you need to be when writing your answers, as it will guide the content of the workshops to be presented.
- Your answers will be treated with strict confidentiality, there is no need to write your name on the survey.

Please circle or write the answers to the following questions:

1. How many years of experience do you have teaching?

   _____

2. Do you hold any other qualifications besides the qualification you hold for teaching?

Yes	No

   If yes, what other qualifications do you hold?

   _____

3. How many learners do you have in your classroom currently?

   _____

4. How many learners in your classroom have difficulty with reading, writing or spelling?

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5. Do you think there is a need for teachers to receive further training regarding how to teach literacy skills?

Yes	No

6. If your answer above was “Yes”, what type of information should be covered in a workshop for teachers on literacy development within the classroom.

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7. Have you attended any training on teaching literacy skills before? If “yes”, what was good about that training? What was not good about that training?

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8. Do you have any support from your school to help you to develop lesson plans for literacy? E.g. another staff member who is trained to assist you with teaching literacy skills in the classroom.

---

9. What is “dyslexia”?

---

10. What difficulties do you experience in teaching literacy in your classroom?

11. How do you currently help learners in your classroom who have difficulties with literacy?

Refer	Give extra lessons	Other

If your answer was “refer”, who do you refer the learner to?

If your answer was “other”, please explain how you help learners who have difficulty with literacy.

12. How do you identify learners struggling with literacy?

13. Please define the term ‘multisensory’.

14. What is phonological awareness?

15. Do you use any multisensory strategies to teach phonological awareness?

16. What is phonics?

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17. Do you use any multisensory strategies to teach phonics?

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18. What materials do you have available to create resources for your learners and for your classroom?

Appendix B: Post-Workshop Survey # 1

- Thank you for taking the time to complete this survey.
- The purpose of this survey is to understand how you felt about the first workshop on the theory behind literacy development and language-based learning disorders such as dyslexia.
- Please be as thorough as you need to be when writing your answers, as it will guide the content of the workshops to be presented.
- Your answers will be treated with strict confidentiality, there is no need to write your name on the survey.

Please circle or write the answers to the following questions:

1. How many years of experience do you have teaching?

   _____

2. Do you hold any other qualifications besides the qualification you hold for teaching?

Yes	No

   If yes, what other qualifications do you hold?

   _____

3. How many learners do you have in your classroom currently?

   _____

4. How many learners in your classroom have difficulty with reading, writing or spelling?

   _____

5. What is “dyslexia”?

6. What are the skills that learners need to learn to read, write and spell?

7. How can speech-language therapists help with literacy skills?

8. What does a dyslexia-friendly classroom mean to you?

9. What is phonological awareness?

10. What is phonics?

- P
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-
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Please circle the number that best represents your skills before and after this training.

RATING SCALE : 1 = LOW 3 = MEDIUM 5 = HIGH

Before training:					**Self-assessment of knowledge related to:**	**After training:**				
1	2	3	4	5	I am able to describe of a working definition of dyslexia	1	2	3	4	5
1	2	3	4	5	I am able to define language-based learning difficulties	1	2	3	4	5
1	2	3	4	5	I understand the components of literacy development	1	2	3	4	5
1	2	3	4	5	I understand the role of the speech-language therapist in supporting teachers	1	2	3	4	5
1	2	3	4	5	I understand the role of the speech-language therapist in supporting literacy development	1	2	3	4	5
1	2	3	4	5	I am able to describe what a dyslexia friendly classroom looks like	1	2	3	4	5

Appendix C: Post-Workshop Survey # 2

- Thank you for taking the time to complete this survey.
- The purpose of this survey is to understand how you felt about the second workshop on designing a dyslexia-friendly classroom and the use of multisensory strategies for teaching literacy skills.
- Please be as thorough as you need to be when writing your answers, as it will guide the content of the workshops to be presented.
- Your answers will be treated with strict confidentiality, there is no need to write your name on the survey.

Please circle or write the answers to the following questions:

1. How many years of experience do you have teaching?

   _____

2. Do you hold any other qualifications besides the qualification you hold for teaching?

Yes	No

   If yes, what other qualifications do you hold?

   _____

3. How many learners do you have in your classroom currently?

   _____

4. How many learners in your classroom have difficulty with reading, writing or spelling?

   _____

5. Did the workshop on how to set up a dyslexia-friendly classroom help you when teaching literacy?

Yes	No

Why or why not?

_____

6. What did you find most helpful about the workshop?

_____

7. Were you able to apply what you had learned in the workshop, in your classroom?

Yes	No

8. Are you confident in your ability to apply your knowledge learned in the workshops?

Yes	No

9. Did the mentoring help you to apply the knowledge you learned in the workshops?

Yes	No

10. How did your learners respond to the different strategies you applied over the past 6 weeks?

_____

_____

11. What strategies did you find most effective? Why do you think those strategies were most effective?

12. Which strategies did you not implement? Why were you not able to apply those strategies?

13. Did you think any strategies taught in the workshops were ineffective?

Yes	No

If "yes", which strategies did not work for you?

14. Please circle the number that best represents your skills before and after this training.

RATING SCALE : 1 = LOW 3 = MEDIUM 5 = HIGH

Before training:					**Self-assessment of knowledge related to:**	**After training:**				
1	2	3	4	5	I am able to think about how information is presented to the learners.	1	2	3	4	5
1	2	3	4	5	I am able to think about how to provide scaffolds to learners.	1	2	3	4	5
1	2	3	4	5	I am able to use various multisensory strategies when teaching literacy skills.	1	2	3	4	5
1	2	3	4	5	I am able to create materials to use when teaching literacy skills.	1	2	3	4	5

15. Please rate how successfully you feel you were able to implement the principles you learnt in the training.

RATING SCALE : 1 = NOT AT ALL 3 = SOMEWHAT 5 = COMPLETELY

1	2	3	4	5

16. Do you feel that your level of experience as a teacher played a role in how well you were able to apply the principles in the workshop? Please explain your answer.

Appendix D: Aims of the Teacher Training Workshops

Workshop 1 Aims (theoretical component)

Following the workshop, the participants will be able to:

- Define dyslexia.
- Define learning difficulties.
- Describe what skills are required for literacy acquisition.
- Discuss the role of the speech-language therapist in supporting teachers to develop learners' literacy skills.
- Describe what a dyslexia-friendly classroom looks like.

Workshop 2 Aims (practical component)

Following the workshop, the participants will be able to:

- Think about how to provide scaffolds to learners, using the gradual release of responsibility model.
- Think about how information is presented to the learners.
- Describe and use various multisensory strategies when teaching literacy skills.
- Create materials to use when teaching literacy skills.

Appendix E: Interview Schedule

Topic	Question	Probes
Content of the workshop	1. You've now had some time to reflect on what was covered in the first workshop. What did you think of the content? 2. Did the first workshop cover areas that you already knew, or not?	Did you think the theoretical workshop was necessary? Tell me about that.
Definitions	3. What do you think about the definitions for dyslexia? 4. What do you think about the definition of a learning disability?	Do you recognise any of your students as having dyslexia or a learning disability if you think about the definitions we discussed?
Components of literacy acquisition	5. Do you think about background knowledge, vocabulary or grammar when teaching reading? 6. How are you currently teaching word decoding skills?	Do you agree with the Active View of Reading Model? That executive functions, language comprehension and word decoding are needed to become a good reader. Do you use any strategies at the moment that you find help with language comprehension, word decoding or executive functions (like working memory, maintaining and shifting attention, controlling inhibitions)?
The role of the SLT	7. Have you worked with an SLT before? How did you find that experience?	Did the SLT ever give you as the teacher input on teaching reading? Was that helpful?
The dyslexia-friendly classroom	8. Do you think implementing a dyslexia-friendly classroom is doable for you?	Do you do anything currently that matches with the description of a dyslexia-friendly classroom?
Planning & collaboration	9. I'm planning on our next workshop being a more practical one, what would you like to see discussed?	I'm thinking about discussing how we can apply the theory of literacy acquisition and dyslexia-friendly practices through using strategies for reading. What do you think?

Appendix F: Classroom Observation Checklist

OBSERVED STRATEGY	Y/N
1. Gradual Release of Responsibility	
The teacher introduces graduated scaffolds that support information processing strategies by: 1. The teacher provides a model of what is expected - "I do it" (focused instruction). 2. The teacher engages in guided learning - "we do it" (guided instruction). 3. The teacher guides the learner to assume more responsibility for the learning task through the use of questions, suggestions, and cues - "you do together". 4. The teacher allows for the learner to independently practise and apply what has been learned - "you do it alone".	
2. Executive Functions	
The teacher engages executive functions of learners by: ***Engaging the learners working memory:*** 5. Prompts learners to explicitly formulate or restate lesson goals. 6. Displays the lesson's goal in multiple ways. 7. Post lesson goals, objectives, and schedules in an obvious place. ***Engaging the learners inhibitory control:*** 8. Uses charts, calendars, schedules, visible timers, and cues that can increase the predictability of daily activities and transitions. 9. Creation of class routines. ***Engaging the learners ability to shift attention*** 10. Alerts and previews that can help learners anticipate and prepare for changes in activities, schedules, and novel events. E.g. changing a picture on the board as a reminder of how much time is left to complete a task. 11. Encourages division of long-term goals into short-term objectives. 12. Varies the social demands required for learning or performance. E.g. The learners are not forced to read aloud.	
3. Presentation of Information	
The teacher displays information in a flexible format: 13. Colour is used for information or emphasis. 14. The layout of visual or other elements is not overcrowded. 15. 'Dyslexia-friendly' fonts used for printed materials. 16. Offers alternatives for auditory information. E.g. uses visual supports to represent emphasis and prosody (e.g., emoticons, symbols, or images). 17. Offers alternatives for visual information. E.g. Uses touch equivalents (tactile graphics or objects of reference) for key visuals that represent concepts. Provides auditory cues for key concepts and transitions in visual information. E.g. "Use your finger to point to each word as you read it".	

18. Uses partner reading. 19. Incorporates explicit opportunities for review and practice.	
Language Comprehension	
Background Knowledge The teacher: 20. Pre-teaches vocabulary and symbols by tapping into learners' experience and prior knowledge. 21. Anchors instruction by linking to and activating relevant prior knowledge (e.g., using visual imagery, word maps). ***Vocabulary*** The teacher: 22. Uses a 'word wall' and defines new words for students; uses colour to categorise new words into nouns, verbs or adjectives/adverbs. 23. Embeds visual, non-linguistic support for vocabulary clarification (pictures, videos, etc). ***Language Structures*** The teacher: 24. Uses 'first lines' strategy. 25. Uses new words verbally in sentences. ***Verbal Reasoning*** The teacher: 26. Reads aloud to the learners - talks about the story before, during and after reading aloud. 27. Uses 'think alouds'. ***Literacy Knowledge*** The teacher: 28. Uses graphic organisers (e.g., Know - Want to know - Learned method, concept maps). 29. "Chunks" information into smaller elements. 30. Prompts the use of mnemonic strategies and devices (e.g., visual imagery, paraphrasing strategies.).	
Word Recognition	
Phonological awareness 31. Targets/links letters and sounds. E.g. uses the alphabet rainbow. 32. Targets rhyming words; segmenting words into syllables or words into sounds; blending syllables into words or sounds into words using tactile, auditory, visual and kinesthetic modes. E.g. counting blocks to represent sounds in a word. E.g. jumping into a circle drawn on the ground for each syllable in a word.	
Decoding 33. Uses sound boxes to aid in sounding out the word whilst reading or spelling. Different colours used to differentiate vowels and/or known spelling patterns. 34. Associates a letter to a visual AND a key word AND a kinesthetic experience. E.g. draw a **s**nake in the form of an /s/; and say "S for snake";	

and associate it to something the learners would have experienced e.g. “snakes slither on the ground”.	
Sight word recognition 35. Uses word walls. 36. Practices sight words using tactile, auditory, visual and kinesthetic modes. E.g. writing or tracing the word, while saying it aloud, while looking at the word.	

Appendix G: Principal Letter and Permission Form

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

January 2023

Dear Principal,

My name is Geraldine Rowell and I am conducting research for a Masters degree in Speech Pathology at the University of the Witwatersrand. My supervisor is Dr. Anniah Mupawose. The title of my research project is "**Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under-Resourced Education Context in South Africa".** I would like to invite your school to participate in this study.

The main aim of the proposed study is to examine the effectiveness of teacher training on how to design a dyslexia-friendly classroom, including using multisensory strategies into literacy instruction. A dyslexia-friendly approach proposes that by improving the learning environment for children with dyslexia, the possibilities for learning will be improved not just for learners with dyslexia, but all learners. This follows the principles of inclusive education. It is anticipated that the results of this study will have implications for teaching practices to facilitate literacy development (and therefore, learning) for all learners in the foundation phase.

I will invite all of the foundation-phase teachers from your school to participate in this study. In total, the research will involve the teachers answering 3 surveys; taking part in 2 workshops;

taking part in a focus group; and being observed conducting a literacy lesson. The study will last about 3 months and will happen over 2 cycles.

Cycle 1

The first workshop will take place in term 2 of 2023, and the focus group will take place after the first workshop. Then, the second workshop will take place approximately 2 weeks later.

Cycle 2

The teachers will then have time to apply what they have learned in both workshops, in their classrooms. The teachers will then be observed during a literacy lesson, which will be recorded through the researcher taking notes and an audio device.

With your permission, the workshops and focus group will take place at your school, at a time that is most convenient for you and the teachers. The workshops will be 2 hours long each; the focus group will take approximately 45 minutes and will be recorded using an audio recording device.

Participation in this study is completely voluntary. The foundation-phase teachers are free to refuse to participate and to withdraw at any time during the study. They will not be penalised or disadvantaged in any way. The participants will not be paid for this study. The names of the research participants and identity of the school will be kept anonymous and confidential always and in all academic writing about the study. Anonymity and confidentiality will be maintained in all published and written data resulting from the study. The surveys will be stored in a locked box, at my home and will not be destroyed. The audio recordings of the focus group will be stored on my password protected computer and will not be destroyed. However, due to the

nature of the focus groups, confidentiality and anonymity between the participants cannot be possible.

The study will be reported through a dissertation that will be made available on the internet through Wired Space accessed through the Wits library website.

I request your permission to carry out the above proposed study. Please feel free to contact me using the contact details below, should you have any questions. I will be happy to provide you with a summary of the study's results, should you wish. I look forward to your response as soon as it is convenient.

Yours sincerely,



Geraldine Rowell	Dr. Anniah Mupawose
(Masters Student)	(Supervisor)
Email: geraldinerowell@gmail.com	Email: anniah.mupawose@wits.ac.za
Cell: 082 850 6328	Phone: (011) 717 - 4571

Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under-Resourced Education Context in South Africa

I hereby give permission to the researcher to conduct the above-mentioned study at this school _____(name of school).

Principal:_____(name)

Signature:_____

Date:_____

Appendix H: Participation Information Sheet



January 2023

Dear Teacher,

My name is Geraldine Rowell and I am conducting research for a Masters degree in Speech Pathology at the University of the Witwatersrand. My supervisor is Dr. Anniah Mupawose. The study is about the effectiveness of teacher training on how to design a dyslexia-friendly classroom, including using multisensory strategies into literacy instruction. A dyslexia-friendly approach proposes that by improving the learning environment for children with dyslexia, the possibilities for learning will be improved, not just for learners with dyslexia, but all learners. This follows the principles of inclusive education. The title of my research project is **"Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under-Resourced Education Context in South Africa"**.

In total, I am inviting you to answer three surveys; take part in 2 workshops; and take part in 2 focus groups. If you decide to take part in this study, your participation will last about 3 months. The research will take place over 2 cycles.

Cycle 1

The first workshop will be 2 hours long and take place in term 2 of 2023. I will ask you to complete a survey before and after the first workshop, the survey will take 10 minutes to

complete. After the first workshop, the first focus group will take place, this will take approximately 45 minutes. The focus group is where you, and the other foundation phase teachers from your school that are participating in this study, will discuss the workshop in a group. In the focus groups, I will ask you about what you thought of the content of the workshops; the theories taught in the workshops; if you were able to apply what you learned in the workshops; and collaborate with you on what you would need further when teaching literacy skills in your classroom. Then, the second workshop will take place approximately 2 weeks later, and will be 2 hours long.

Cycle 2

You will then have time to apply what you have learned in both workshops, in your classroom. 6 weeks after the second workshop, I will ask you to complete a survey (this will take 10 minutes to complete) and the second focus group will take place. The second focus group will be approximately 45 minutes long.

The workshops and focus groups will take place at your school, at a time that is most convenient for you.

On the surveys, I will need to ask some personal information from you, including how many years of experience you have teaching, as well as any additional training workshops that you have attended on literacy, and any further qualifications you hold. You will not need to write your name on the survey.

With your permission, I would like to audio record the focus groups and classroom activities during a literacy lesson. The audio recordings of the focus groups will be stored on my

password protected computer. The survey will be stored in a locked box, at my home. Only I will have access to this data, the data will not be destroyed. With your permission, this data may be used in future research, but your name and any personal information will not be identifiable. Because you work with the other teachers who will be participating in this study, confidentiality and anonymity during the focus groups cannot be possible. Your name and identity of the school will be kept confidential always and in all academic writing about the study. Anonymity and confidentiality will be maintained in all published and written data resulting from the study.

If you decide to take part in this 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 decide 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. The risks for this research study are no more than what happens in everyday life.

This research study will be written up as a dissertation. 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,



Geraldine Rowell
(Masters Student)
Email: geraldinerowell@gmail.com
Cell: 082 850 6328

Dr. Anniah Mupawose
(Supervisor)
Email: anniah.mupawose@wits.ac.za
Phone: (011) 717 - 4571

Appendix I: Participant Consent Form



Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under-Resourced Education Context in South Africa

Researcher: Geraldine Rowell

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 the focus group being audio recorded.	YES	NO
I agree to the classroom observation being audio recorded.	YES	NO
I agree that direct quotations from my focus group or surveys may be used by the researcher in their dissertation.	YES	NO

I agree that my participation will remain anonymous and confidential (my name will not be used by the researcher in their dissertation). However, my participation in the focus group will not be anonymous as the focus group will be a group activity with my colleagues.	YES	NO
I agree that other researchers may use the information I provide in my surveys and focus group but my name and any personal information will not be used or passed on.	YES	NO

_____ (Signature)

_____ (Name)

_____ (Date)

Appendix J: Permission Letter from Research Site

UNITED WE STAND
UCS
Quality Education for Primary and High School Learners
44 Frances Street, Yeoville, Johannesburg PO Box 93016, Yeoville, 2143
T: 011 648 4727 F: 086 649 9080 E: uchs@unitedcs.co.za www.ucs.org.za

I, the principal of United Church School, do give permission for Geraldine Rowell to conduct her study entitled "**Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under Resourced Education Context in South Africa**". I give her permission to conduct teacher-training workshops, focus groups and surveys.

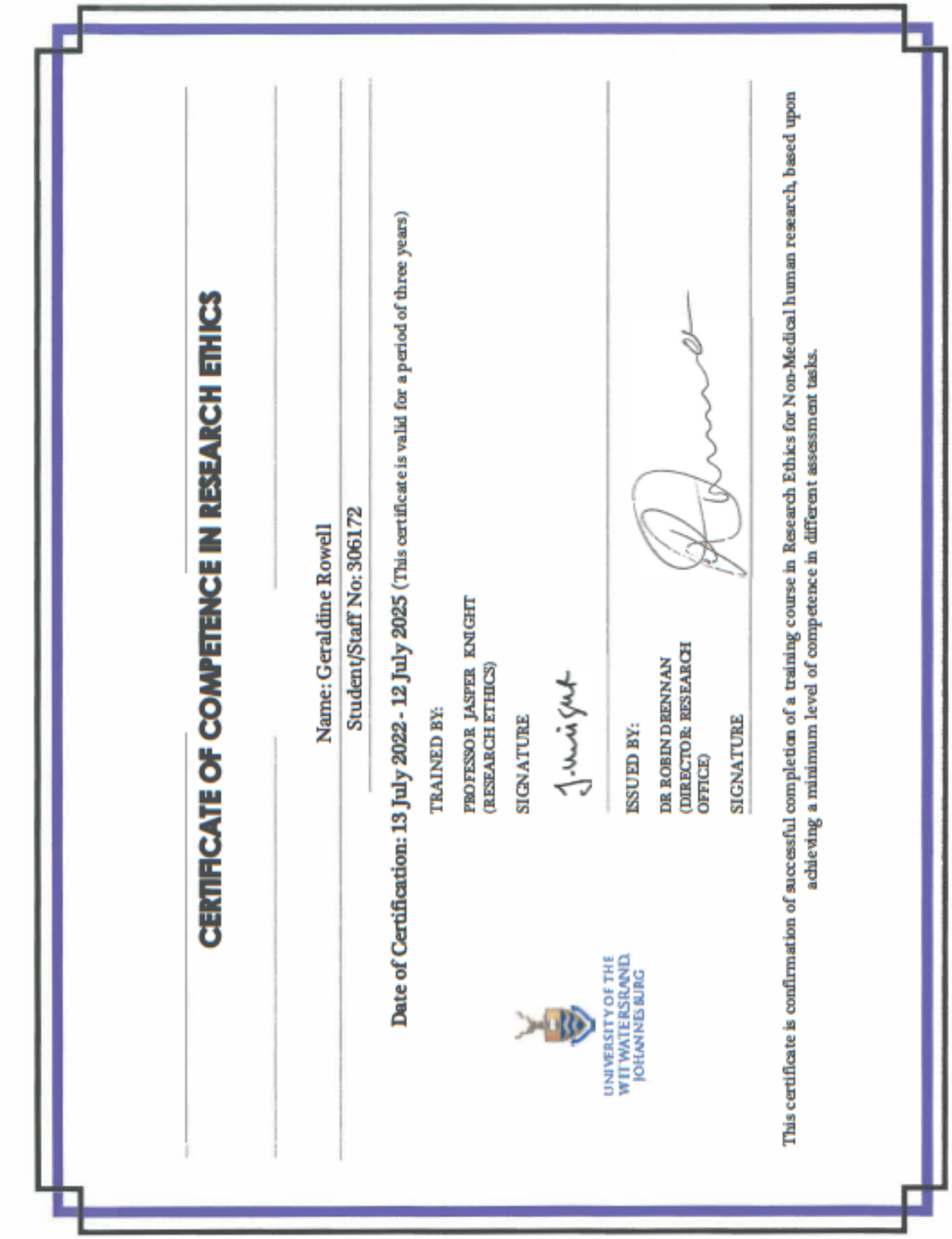
Helenne Ulster
Name



Signature

20/2/23
Date

Appendix K: Certificate of Competence in Research Ethics



CERTIFICATE OF COMPETENCE IN RESEARCH ETHICS

Name: Geraldine Rowell

Student/Staff No: 306172

Date of Certification: 13 July 2022 - 12 July 2025 (This certificate is valid for a period of three years)

TRAINED BY:

PROFESSOR JASPER KNIGHT
(RESEARCH ETHICS)

SIGNATURE

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

ISSUED BY:

DR ROBIN DRENNAN
(DIRECTOR: RESEARCH
OFFICE)

SIGNATURE

This certificate is confirmation of successful completion of a training course in Research Ethics for Non-Medical human research, based upon achieving a minimum level of competence in different assessment tasks.

Appendix L: Ethics Approval Letter

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

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

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H22/11/77**
PROJECT TITLE	Creating a Dyslexia-Friendly Classroom: Foundation-Phase Teacher Training on Multisensory Strategies to Facilitate Literacy Learning in an Under Resourced Education Context in South Africa
INVESTIGATOR(S)	Ms G Rowell
SCHOOL/DEPARTMENT	Human and Community Development/
DATE CONSIDERED	25 November 2022
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	13 February 2026

DATE 21 February 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.**

_____ _____/_____/_____
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES