The implementation of inclusive education by teachers of learners with visual impairment

Refilwe Modisi

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The implementation of inclusive education by teachers of learners with visual impairment

by

Refilwe Modisi

Submitted in partial fulfilment of the requirements for the degree

MAGISTER EDUCATIONIS
(Educational Psychology)

Department of Educational Psychology
Faculty of Education
University of Pretoria

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PRETORIA
OCTOBER 2019

Declaration of Originality

I, Refilwe Modisi (student number 28327102), declare that the dissertation, which I hereby submit for the degree Magister Educationis in Educational Psychology at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

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Refilwe Modisi
October 2019

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Ethical Clearance Certificate

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CLEARANCE CERTIFICATE	CLEARANCE NUMBER:	UP 17/06/01 Ferreira 17-002
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- Informed consent/assent,
- Adverse experience or undue risk,
- Registered title, and
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Ethics Statement

The author, whose name appears on the title page of this dissertation, has obtained, for the research described in this work, the applicable research ethics approval. The author declares that she has observed the ethical standards required in terms of the University of Pretoria's *Code of ethics for researchers and the Policy guidelines for responsible research*.

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Refilwe Modisi

October 2019

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Abstract

The implementation of inclusive education by teachers of learners with visual impairment

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Refilwe Modisi

Supervisor: Mr Lindokuhle Ubisi

Co-supervisor: Prof. Ruth Mampane

Degree: M. Ed. (Educational Psychology)

The purpose of my study was to explore the different ways in which teachers in full-service and special needs schools implement inclusive education policy with learners who are visually impaired. My study was focused on 4 schools in the Gauteng province consisting of 2 full-service schools and 2 special needs schools. The study specifically focused on the teaching strategies which teachers used with learners who are visually impaired. I relied on an interpretivist meta-theory and employed a qualitative research approach to my study. I utilised a multiple case study design and relied on multiple sources of data collection which included participatory action research (PAR) based workshops, observations, field notes, audio-visual data and a research diary to document the research process. I conducted an inductive thematic analysis on the data that was collected. The findings of the study indicated that teachers in full-service schools and special schools both adopted similar implementation strategies such as having making various adaptations to the learning materials and the actions of the teacher in being an implementer. Some of the differences were also made mention of between the full-service and special schools. Teachers did also note some of their needs and challenges in relation to resources needed such as braille machines, embossing machines and various assistive devices.

Key words

- Full-service school
- Implementation
- Inclusive education
- Special school
- Teacher
- Visual impairment

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LANGUAGE-EDIT DECLARATION

I, WILNA SWART, hereby declare that in August 2019 I performed a professional language- edit of the following degree:

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Title: **THE IMPLEMENTATION OF INCLUSIVE EDUCATION BY TEACHERS OF LEARNERS WITH VISUAL IMPAIRMENT**

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Ms Modisi received a comprehensive set of editorial comments and recommendations and she will accept or reject any editorial amendments that had been made at her discretion.

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Chapter 1
Overview and Background of the Study

1.1   INTRODUCTION TO THE STUDY

The current study aimed to explore the ways in which teachers implemented the inclusive education policy with learners who are visually impaired. This study formed part of a larger national project undertaken by the University of Pretoria that had an objective to develop a qualification enabling teachers to gain specialised knowledge in teaching learners who are visually impaired. The objective of this exercise was to support teacher training in the field of implementing inclusive education policy. In the context of the current study, the research took place at two full-service schools and two special schools, all of which were found in the city of Pretoria in Gauteng, a province in South Africa. Figure 1.1 below shows the map area of Pretoria in Gauteng, indicating where the current study took place.
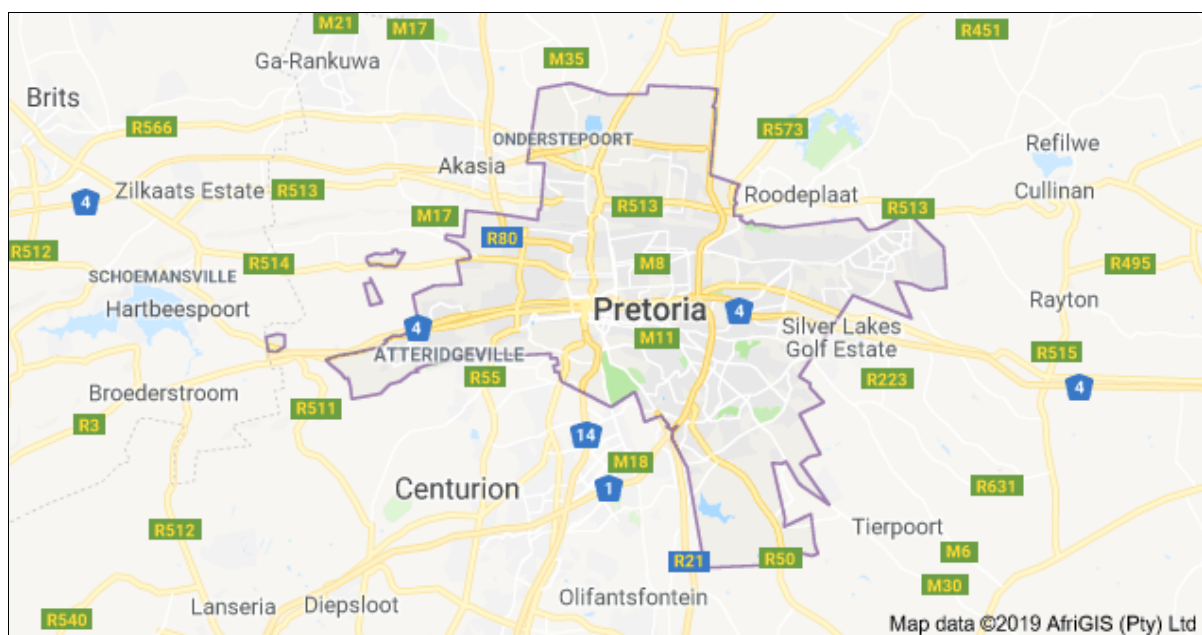
Figure 1.1:   Map area of Pretoria, Gauteng, where the study took place

Since the advent of a democratic South Africa in 1994 there has been significant educational transformation of the situation that prevailed under the former apartheid regime (Malinen, Savolainen, Engelbrecht, Xu, Nel, Nel & Tlale, 2013; Lomofsky &

Lazarus, 2001). The former education system, which was divided along racial lines, was characterised by an unequal distribution of resources, vast disparities in financial allocation, and differences in the quality and level of teacher training (Walton, 2011; Naicker, 2000). Moreover, there was a dual education system for mainstream schools and one for special schools (Donohue & Bornman, 2014; Naicker, 2000). Thus, learners were not only separated according to race but also according to ability (Walton, Nel, Hugo, & Muller, 2009).

The South African government's first step towards transformation of the education system was to formulate education policies that embraced principles that were driven by inclusion and equality (Badat & Sayed, 2014; Sayed & Soudien, 2005). This process was enacted by the Constitution of the Republic of South Africa Act No.108 of 1996 (Republic of South Africa, 1996b) and the South African Schools Act No. 84 of 1996 (Republic of South Africa, 1996a) which promoted the equal rights of all learners to basic education and provided that no individual should be discriminated against on the basis of disability (Walton, 2018; Dalton, McKenzie, & Kahonde, 2012). Together these pieces of legislation proposed to rectify the inequalities which were promoted by the previous government (Bornman & Donohue, 2013; Sayed & Carrim, 1998).

Central to this shift towards an equal and unified education system was the move towards an inclusive education system which involved the process of ensuring that all learners received the appropriate education, which catered to their specific learning needs (Engelbrecht, Nel, Smit, & Van Deventer, 2016; Prinsloo, 2001). As a result, schools were required, by law, to ensure that all learners had equal opportunities to participate in the learning process and that they should therefore practice a culture of responsiveness to the differences in the learning needs of learners (Donohue & Bornman, 2015; Abosi & Koay, 2008).

To facilitate the change in developing an inclusive education system, the White Paper on Education and Training (Department of Education, 1995) was published by the Department of Education, which resulted in further research being done to address policy-related issues and make recommendations for the new education policy that was to be formulated (Tibbitts & Keet, 2017; Christie, 2016; Daniels, 2010). The findings of this research showed that the education system had fallen

short in making appropriate provisions for learners' varying needs (Beckman, 2016; Padayachee, Naidu, & Waspe, 2014). The findings derived from the first White Paper (Department of Education, Republic of South Africa, 1995) provided the framework for developing the current policy on inclusive education, White Paper 6: Special Needs Education Building an Inclusive Education and Training System (Department of Education, 2001).

At the heart of the transformation of the education system was the need to reorientate teachers to be the main resources in inclusive classrooms (Department of Education, 2001). Previous research has shown that teachers play a significant role in inclusive education policy implementation (Loreman, Sharma, & Forlin, 2013; Pace & Aiello, 2016). Furthermore, it identified that the training of teachers in preparation for the inclusive classroom involved a change in beliefs, attitudes, values and skills, which would in turn enable them to implement inclusive education more effectively (Forlin, 2013; Westbrook & Croft, 2015).

In the context of this study, it is moreover important to take into account the disability prevalence in South Africa to highlight the importance of inclusive education. According to a 2011 Census data report, 7.5% of the South African population, 2,870,130 people, are living with some form of disability (Statistics South Africa, 2011). Within this figure reflecting prevalence, the number of persons affected with vision problems stood at approximately 700,000 members of the population (Statistics South Africa, 2011), making it the most prevalent disability at 32%. Equally important, research has shown that the biggest challenge which people with disabilities face is education (Department of Social Development, Department of Women, Children and People with Disabilities & UNICEF, 2012; Mutanga, 2017; Statistics South Africa, 2011).

In this study, I set out to examine how inclusive education policy is implemented in the classroom by teachers of learners who are visually impaired. Specific attention was focused on the various teaching strategies that teachers in full-service schools and special schools employed in implementing inclusive education policy. The study aimed to explore the different, and at times similar strategies used to implement inclusive education policy with learners who are visually impaired.

1.2   PURPOSE AND AIMS OF THE STUDY

Research on inclusive education has centred mainly on challenges faced by teachers, a lack of stakeholder involvement and the perceptions of teachers about issues pertaining to including learners with barriers to learning in the classroom. This study aimed to expand on current literature, specifically in South Africa, by extending the knowledge base to include teaching strategies that teachers use in the implementation of inclusive education in the classroom. The aspects looked at were the similarities, differences and needs of teachers. Furthermore, the study aimed to provide a comparison between teachers in full-service schools and teachers in special schools and their various implementation strategies. It in addition aimed to highlight a specific barrier, visual impairment, as opposed to looking at a wide range of learning barriers, thus providing insight into what teachers in both these types of school do to include learners in the classroom who are visually impaired.

1.3   PROBLEM STATEMENT

The problem is that despite the unification of the education system and the shift towards an education system that promotes inclusion, challenges are still being faced with implementation. In a study by Fish Hodgson (2018), it was found that the implementation of White Paper 6 (Department of Education, 2001) was not progressing as originally anticipated (Department of Basic Education, 2014b, 2017). The findings included but were not limited to challenges in accessibility to resources for learners who require support, teacher incompetence and lack of confidence. Teachers have reported feeling unprepared for implementing inclusive education in the classroom (Bornman & Donohue, 2013; Engelbrecht, Savolainen, Nel, Koskela, & Okkolin, 2017; Geldenhuys & Wevers, 2013) yet they are given the responsibility to be the implementers of an inclusive environment in the classroom (Tyagi, 2016).

Similarly, learners who are visually impaired are not being adequately included in the education system (Department of Basic Education, Republic of South Africa, n.d.; Fish-Hodgson & Khumalo, 2015a, 2015b). Blind learners and learners with low vision have unique learning needs that require teaching strategies which tap into skills that do not require their sight such as their tactile and auditory skills (Baboo, 2011; Kocyigit & Artar, 2015). The study into the teaching strategies that are used in full-

service schools and special schools can be used to inform the implementation of inclusive education for learners who are visually impaired (Hornby, 2015).

1.4   RATIONALE

As I started engaging with the literature relating to my topic, I came across a common trend, namely that research pertaining to inclusive education in South Africa focused almost exclusively on policy (Daniels, 2010; Naicker, 2006) teacher self-efficacy (Malinen et al., 2013; Savolainen, Engelbrecht, Nel & Malinen, 2012), teacher preparedness (Hay, Smit & Paulsen, 2001) and teacher beliefs (Donohue & Bornman, 2015; Bornman & Donohue, 2014; Meltz, Herman & Pillay, 2014) about inclusive education. There was a gap in the literature about the implementation strategies that teachers used in the classroom. The literature did not mention implementation in depth but rather provided brief summaries of the role teachers play in implementing strategies and finding solutions to the challenges faced by teachers to create a classroom that promoted the principles of inclusive policy. Moreover, there was a gap relating to inclusive education teaching strategies and learners who were visually impaired in South Africa.

The implementation of inclusive policy required that policies and practices remained sensitive to learners needs in the classroom (Department of Education, 2001; Dreyer, 2017). The current study provided me with the opportunity to contribute to the body of knowledge on inclusive education by focusing on the implementation of inclusive education policy with visually impaired learners in full-service schools and special schools.

In addition to this, I had previously worked as a teacher before commencing with my master's degree at the University of Pretoria. I was a teacher in Botswana, therefore I had not previously been exposed to the South African education system. Preparing to be part of a support structure for inclusive education implementation as an educational psychologist further played a part in promoting my interest in the research topic. Furthermore, my previous role as a teacher fuelled my interest in gaining an understanding of implementation strategies that are employed by teachers in full-service and special schools.

1.5 RESEARCH QUESTIONS

The following research questions were formulated to guide the study:

1.5.1 PRIMARY RESEARCH QUESTION

- How do teachers in full-service and special schools implement inclusive education policy for learners who are visually impaired?

1.5.2 SECONDARY RESEARCH QUESTIONS

- What are the differences and similarities in the implementation of inclusive education policy, for learners who are visually impaired, by teachers from full-service and special schools?

- What are the full-service and special school teachers' common needs to implement inclusive education policy for learners who are visually impaired?

1.6 DEFINITION OF KEY TERMS

1.6.1 INCLUSIVE EDUCATION

According to the United Nations Educational, Scientific and Cultural Organization ([UNESCO], 2008), inclusive education is the process that involves the transformation of schools to fulfil the needs of all children, including those identified as having learning difficulties and disabilities (Yada & Savolainen, 2017). Furthermore, it involves increasing participation and minimising exclusionary practices within and from education (UNESCO, 2009). In the context of this study, special attention was focused on skills and resources that teachers used to ensure the inclusion of learners in their classrooms who are visually impaired. This included the specific teaching strategies that they used to implement the principles that are outlined in White Paper 6 (Department of Education, 2001).

1.6.2 TEACHER

A teacher can be defined as an individual who imparts knowledge and skills to learners, who enables them to acquire skills that will enhance their development

(Senge, 2000). Furthermore, the role of the teacher is no longer limited simply to disseminating knowledge to learners, but has evolved into one that promotes aspects contributing to the emotional and social development of a learner (Nandini & Taj, 2014). This implies that teachers have a responsibility to all learners in their classrooms and should thus provide adequate support, including but not limited to implementation strategies for learners who may be experiencing barriers to learning. In the context of the study, the role of the teacher in the full-service and special schools was studied to determine the levels of support that teachers provided for learners who are visually impaired.

1.6.3 VISUAL IMPAIRMENT

There are varying degrees of visual impairment, which often depends on the cause of the impairment. According to the classification that is used by the World Health Organisation blindness and low vision are classified in accordance with the International Classification of Diseases tenth revision (ICD-10) ICD-10:H54.The ICD-10 is a standard diagnostic code that is used to diagnose a variety of diseases and disorders (Tio, Epskamp, Noordhof & Borsboom, 2016). "Blindness is defined as "visual acuity of less than 3/60" while "low vision is defined as visual acuity of less than 6/18" (Sacharowitz, 2005 p. 140). Due to the different degrees of vision loss experienced by learners, learners who are visually impaired require appropriate implementation strategies in the classroom. In this study, visual impairment included learners who had low vision, learners who were progressively losing their sight as well as learners who were blind.

1.6.4 IMPLEMENTATION

Implementation may be defined as "a specified set of activities designed to put into practice an activity or programme" (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005, p. 5). Furthermore, activities that are used in implementation are purposeful and provide enough explanation for a third-party onlooker to be able to identify the strengths and presence of the activities (Fixsen et al., 2005). It can be viewed as an essential aspect of the policy process applied in changing ideas into behaviours that are directed towards improving the lives the implementation is targeting (DeGroff & Cargo, 2009). In this study implementation refers to the strategies and practices that

teachers employ to increase curriculum access for learners who are visually impaired effectively. As the researcher I had to be able to identify the practices as aligning with inclusive education policy.

1.6.5 FULL-SERVICE SCHOOL

"Full-service schools are first and foremost mainstream education institutions that provide quality education to all learners by supplying the full range of learning needs in an equitable manner …" (Department of Basic Education, 2010a p. 7). Full-service schools provide moderate to high levels of support to learners (Landsberg, Kruger, & Swart, 2016). In the light of this study, a full-service school aims to increase participation and minimise exclusion through a variety of implementation strategies that are employed by teachers for learners with visual impairment (Department of Basic Education, 2010a).

1.6.6 SPECIAL SCHOOL

Special schools are for all learners who require high-intensity support (Landsberg et al., 2016). Hodgson and Khumalo (2017) identified special schools as those that catered exclusively for learners with disabilities. In addition to this, special schools in South Africa are transitioning to function as resource centres for the provision of expert staff, and transferring support in respect of curriculum differentiation, assessment and teaching strategies to neighbouring mainstream and full-service schools (Department of Education, 2001; Landsberg et al., 2016; Motala, Dieltiens, Carrim, Kgobe, Moyo, & Rembe, 2007).

In this study special schools are identified as those schools that cater to learners with specific barriers to learning and have the resources in place to provide specialised support to meet the specific needs of the learner. The special schools were identified as having and providing professional and expert knowledge and skills relating to the implementation of inclusive education policy for learners who were visually impaired.

1.7 RESEARCH PARADIGM

For my study I relied on the interpretive paradigm. Interpretivism presents the view that the world and knowledge are socially constructed and that there is no objective

reality (Packard, 2017; Ryan, 2018). Interpretivism calls to attention the meanings which individuals attach to their lives, their experiences and the driving factors behind their actions such as their interactions with others in society and their own behaviour (Chowdhury, 2014). The interpretive paradigm was relevant for my study because it enabled me to gain better knowledge and understanding regarding implementation strategies that align with the principles of inclusive education policy in respect of learners who are visually impaired. A more thorough explanation of my research paradigm is found in Chapter 3.

1.8   RESEARCH METHODOLOGY

For this study I chose to use a qualitative approach. According to Creswell (2014, p. 4) qualitative research is "an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." The qualitative approach provides explanations for phenomena as they occur in their natural settings (Flick, 2018). This approach seeks to understand human behaviour from the perspective of the insider as it is experienced in their context (Ary, Jacobs, & Razavieh, 2002). A qualitative approach enabled me to gain new insight into inclusive education policy implementation by teachers of learners who are visually impaired. Chapter 3 contains a detailed description of my research paradigm.

1.8.1   RESEARCH DESIGN

A multiple case study was the selected research design for the study about the implementation of inclusive education policy by teachers. According to Stake (1995) a multiple case study design looks at the varying dynamics of a case in a specific environment. Yin (2009) further explains that a multiple case study is used when there is more than one case being studied in order to understand why a phenomenon exists in a certain context. A multiple case study was used as my study formed part of an already existing project. Multiple case studies play a secondary role in understanding a particular issue (Grandy 2010; Stake, 1994) and help to enable understanding of a specific aspect within the wider context of the phenomenon under study (Stake, 1994).

1.8.2 SAMPLING AND SELECTION OF PARTICIPANTS

I chose purposive sampling for this study. The participants were purposefully selected based on a set of criteria. Purposive sampling is used for identifying and selecting cases that are rich in information relevant to the particular phenomenon that is being studied (Moser & Korstjens, 2018; Palinkas et al., 2015). The teachers who were selected meant that they were in possession of specific traits that allowed for rich information to be obtained when they answered the set research questions. In Chapter 3 further explanations regarding the sampling procedures that were employed in the study are cited.

1.8.3 DATA COLLECTION AND DOCUMENTATION

This section will briefly look at the data-collection methods that were employed as well as the methods used for data documentation. A more detailed explanation of the methods used can be found in Chapter 3. The data-collection methods used were workshops based on PAR, observations and field notes.

1.8.3.1 PAR-based workshops

Participatory action research is considered to be a subcategory of action research (MacDonald, 2012). Watters and Comeau (2010, p. 5) defined it as "a research method involving both participants and researchers throughout the process from the initial stages to gathering and communicating final results." According to Baum, MacDougall, and Smith (2006), PAR aims to understand the world and then proceeds to change aspects of the phenomena in the study. During the PAR-based workshops, of which I was co-facilitator, teachers were placed in small groups and presented with five posters relating to inclusive education. For this study, my focus was on the poster topics that dealt particularly with the implementation of inclusive education policy with learners who were visually impaired.

1.8.3.2 Participant observation

Observations involve descriptions of people's behaviour in their real-life contexts (Ary et al., 2002). They enabled the researcher to have a "written photograph" of the phenomena relevant to the research (Shah, 2017). Observation involves being privy

to the day-to-day routines and activities of participants in their natural settings (Kawulich, 2005). Throughout the course of the data-generation process, I relied on participant observation during the PRA-based workshops as well as during the classroom observation exercises. Participant observation allowed me to be involved in the natural setting, where I could capture important processes in the different teaching strategies applied in the classrooms I observed in full-service schools and special schools.

1.8.3.3 Field notes

Field notes are a common way of documenting data that have been generated during observations (Ary et al., 2002). Field notes are "written explanations or data taken, often by multiple observers at a single event, capturing interactions of interest" (James, Milenkiewicz, & Bucknam, 2008, p. 74). Descriptive field notes give descriptions of the researchers observations while reflective field notes build on the descriptive field notes to reflect the researcher's personal account of what they have learnt from the interaction.

1.8.3.4 Researcher diary

A research diary is a handwritten or verbal account of occurrences that have happened over time. These often reveal how writers give meaning to their topics (James et al., 2008; Tuesner, 2016). A diary was utilised to record my own thoughts and engage in a reflexive process, determining my own sense of self. Reflective questions pertaining to my own position, previously having worked as a teacher, were used to guide me in enhancing my level of self-awareness.

1.9 DATA ANALYSIS AND INTERPRETATION

Inductive thematic analysis was employed in this study. Thematic analysis is used to present themes or patterns that relate to the data generated (Alhojailan, 2012). It involves the identification of themes through thorough and meticulous reading and re-reading of the data (Fereday & Muir-Cochrane, 2006). Braun and Clarke (2006) describe six phases that can be used in inductive thematic analysis. These steps and the analysis process I followed are explained in further detail in Chapter 3.

1.10   QUALITY CRITERIA

Scientific rigour was achieved by employing the criteria proposed by Lincoln and Guba (1985), namely credibility, transferability, dependability and conformability. Descriptions of each criterion are given, including the measures that were taken to ensure the rigour of the research study. *Credibility* refers to the level of confidence in the truth of the findings (Korstjens & Moser, 2018; Loh, 2013). Credibility ascertains whether or not the findings derived from the research are true and accurate representations of information that was obtained from participants (Lincoln & Guba, 1985). Strategies such as peer debriefing prolonged engagement in the field, persistent observation and member-checking are used to ensure credibility (Anney, 2014; Lincoln & Guba, 1985; Pandey & Patnaik, 2014). In the context of my study, member-checking was done with participants some time after the data-collection period had ended to confirm that the data collected were indeed an accurate depiction of what they had said. To add to this, I engaged in regular discussions with my supervisors to circumvent any assumptions or bias that I may have been unaware of. Moreover, the triangulation of data, using multiple sources of data, confirmed the results of the study as consistent.

Transferability is the extent to which the findings obtained can be generalised to other contexts (Anney, 2014). Strategies that can be used to ensure transferability are providing thick description and doing purposive sampling (Anderson, 2017; Anney, 2014). As previously mentioned, purposive sampling was the chosen sampling method as it provided the opportunity for the participants to provide rich and thick description of their experiences and the strategies that they used in the implementation of policy.

Dependability is ensuring that the results are consistent (Lincoln & Guba, 1985) and "stand the test of time," (Bitsch, 2005, p. 86). An audit trail can be used as a measure of upholding the criterion of dependability (Lincoln & Guba, 1985). An audit trail involves describing the research process in a detailed manner, from the commencement of the research up to reporting of the findings (Korstjens & Moser, 2018). During the course of the research process I kept a researcher diary which detailed my field notes during data generation, observation notes, data

documentation through audio and visual means, my personal notes and reflexivity, and my thematic analysis process.

Conformability means that the findings obtained have not been influenced by the researcher's own interests or assumptions (Lincoln & Guba, 1985). A conformability audit and reflexivity are strategies to ensure that the findings reported on are the experiences and ideas of the participants (Noble & Smith, 2015; Pandey & Patnaik, 2014). In the context of the current study, I used a researcher diary to note down my assumptions and I engaged in regular discussions with my co-researchers and supervisors to ensure that my personal assumptions were not affecting my interpretation.

1.11 ETHICAL CONSIDERATIONS

As this study formed part of an already existing project, I adhered to the ethical guidelines of the research process by first acquiring ethical clearance from the University of Pretoria before embarking on data collection. Attaining this clearance was important as it ensured that, as the researcher, I would conduct my study and myself in a manner that reflected moral and professional values to the participants (Resnik, 2015). In view of the study having human participants, I abided by the following ethical principles: voluntary participation and informed consent, privacy, confidentiality and anonymity, protection of welfare and the right to withdraw. The ethical considerations which guided the study are discussed in more detail in Chapter 3.

1.12 CHAPTER OUTLINES

Chapter 1 is the introduction to the study. It provides the purpose of the study, the rationale of the study, the research questions, concept clarification, the research methodology overview, quality criteria and ethical considerations.

Chapter 2 examines existing literature that is found within the context of the study. I began by looking at the theoretical framework underpinning the study. I then gave information on the prevalence of visual impairment globally and within the context of South Africa, followed by the development of inclusive education and the

implementation strategies that are used with learners in this country who are visually impaired.

Chapter 3 provides a more in-depth explanation of the research process. In this chapter I explain the selected methodological paradigm, the research design, data-collection and documentation strategies and analysis techniques. I also explain the ethical considerations and criteria followed in conducting quality research.

Chapter 4 describes the results that were gathered from the data collection. I presented the themes that emerged and results relating to as to what was found in existing literature in Chapter 2.

Chapter 5 provides the research findings and the concluding remarks.

1.13   CONCLUSION

In this chapter, I aimed to provide an overview of the study. I began by introducing the context of the study, after which I detailed the problem statement, and the rationale for the study. The questions guiding the investigation into the problem were outlined and the key terms used in the study were defined. I then gave an outline of the research methodology, briefly explaining the research paradigm, research design, selection of participants and sampling technique and the data-collection and documentation methods. I then proceeded to elaborate on the quality criteria and ethical considerations.

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Chapter 2
Literature Review

2.1   INTRODUCTION

This chapter begins by looking at visual impairment in greater detail, including its prevalence internationally and in South Africa. The focus then turns to inclusive education development in South Africa, after which I examine the teaching strategies that are currently used in classrooms with learners who are visually impaired. I concluded the chapter by discussing the theoretical framework that guided the study.

2.2   VISUAL IMPAIRMENT

2.2.1   DEFINITION

Visual impairment is defined according to the ICD-10:H54 classification. It is defined as:

"categories 1 to 5 of visual loss. Blindness, ICD-10 categories 3 to 5, is defined as visual acuity of less than 3/60. It can either correspond with visual field loss to less than 10 degrees in the better eye, with best possible correction. Low vision, ICD-10 categories 1 and 2, corresponds with visual acuity of less than 6/18. However, it is equal to or better than 3/60, or corresponding visual loss with less than 20 degrees in the better eye, with best possible correction" (Pascolini et al., 2004 p.68).

2.2.2   PREVALENCE OF VISUAL IMPAIRMENT

2.2.2.1 Global prevalence of visual impairment

Thylefors, Negrel, Pararajasegaram, and Dadzie (1995) found in their study in 1990 that an estimated 148 million of the world population had visual impairment. Of the 148 million, 38 million were blind and 110 million had low vision (Resnikoff et al., 2004; Thylefors et al., 1995). Resnikoff et al. (2004) in 2002 estimated the prevalence of visual impairment to be in excess of 161 million, with 37 million who

were blind and 124 million who had low vision. The number of people with visual impairment has since increased according to the World Health Organisation's latest statistics (World Health Organisation, 2018). An estimated 1.3 billion people globally have some form of visual impairment, of whom approximately 36 million are blind, with those who have mild visual impairment and moderate to severe visual impairment standing at 188.5 million and 217 million respectively (World Health Organisation, 2018).

2.2.2.2 Prevalence of visual impairment in South Africa

As previously mentioned, visual impairment has the highest prevalence of disability in South Africa at 32% (Naidoo et al., 2015; Statistics South Africa, 2011) and is a significant barrier to accessing education in South Africa (Naidoo et al., 2015; Statistics South Africa, 2011). Disabilities related to sight were reported in the 2011 Census to be among the most common found in children. It was found that over 100,000, about 23% of all disabled children, were reported to be blind or to have some form of severe visual impairment (Department of Social Development et al., 2012; Statistics South Africa, 2011).

It was estimated by the Department of Basic Education that approximately 597,593 children with disabilities may not have access to education (Fish Hodgson & Khumalo, 2015a; Human Rights Watch, 2017). In addition to this the Human Rights Watch estimates that 250,000 of these out-of-school children have some form of visual impairment (Blind SA launches R1m fundraising campaign to #GiveWordsWings, 2018). This contravenes on the rights of children to access basic education, as specified in the constitution and inclusive education policy. To add to this, there are only 6,000 learners who are enrolled in special schools for visual impairment while 12,000 are enrolled in mainstream schools (Govender, 2018). Moreover, this has implications for the way inclusive education is implemented. The inaccessibility of education results in inclusive education policy not adequately serving its intended purpose, which is to minimise exclusion and increase the participation of learners who are visually impaired.

The statistical figures in this section about the prevalence of visual impairment give a good indication of visual impairment as a significant challenge in South Africa and

globally. More importantly, the prevalence statistics indicate the potential number of visually impaired learners who are experiencing barriers to learning and may not have access to education which sufficiently caters for the needs of learners who are totally blind or have low vision.

2.3   INCLUSIVE EDUCATION

2.3.1   INCLUSIVE EDUCATION IN SOUTH AFRICA

The adoption and development of an inclusive education stance in South Africa is fundamentally motivated by the political, economic and social history of the country (Lebona, 2013). Therefore, it is imperative to understand the development of inclusive practices through studying the influence of the previous structures that had been in place. Apartheid intended to propagate and embed racial and ethnic divisions in society, therefore specific structures were put in place to ensure that the principles of apartheid were promoted (Motala et al., 2007; Naicker, 2000). Education for white South Africans was compulsory, whereas this was not the case for learners of other racial groups (Donohue & Bornman, 2014).

Under the apartheid government there were 19 education departments, 11 of which were separate education departments for the black majority (Sayed & Kanjee, 2013). Learners who were assessed as requiring special education were placed in the special needs education system, which resulted in practices that excluded them from mainstream schooling and exposed them to the vulnerabilities of discriminatory and prejudicial practices (Donohue & Bornman, 2014). According to Walton (2011), even within the dual systems, the divide was apparent in the allocation of resources and funding. The special schools that catered for white learners were adequately resourced whereas the special schools for black learners did not receive adequate resources, nor sufficient support, meaning that some learners could not attend school at all (Mestry & Ndhlovu, 2014; Walton, 2011).

In redressing the past inequities in education, in 1994 the primary objective of the then democratically-elected government was to undo policies, structures and practices that had been put in place during apartheid (Department of Education, 2001). This was in the form of the South African Constitution, in which the Bill of

Rights may be found, which serves as the "cornerstone of democracy in South Africa … and affirms the democratic values of human dignity, equality and freedom" (Republic of South Africa, 1996b, p. 7). Section 9(3) of the Bill of Rights specifically directs attention to promoting the equality of individuals regardless of disability (Republic of South Africa, 1996b). Equally important, section 29(1) states that "everyone has the right to basic education" (Republic of South Africa, 1996b, p. 12).

In keeping with the notion of promoting social and racial equality, the education system was unified (Department of Education, 2001), dismantling the dual system so as to have a single administrator of education. The unitary department instituted policy transformation to conform to the values now guiding education in South Africa (Geldenhuys & Wevers, 2013). The South African Schools Act (Republic of South Africa, 1996a) further advanced the move towards an egalitarian school system through making learning and school attendance compulsory for all learners, and by noting that all public schools "must admit learners and serve their educational requirements without unfairly discriminating in any way" (p. B-5).

Furthermore, section 12(4) states that "The Member of the Executive Council, where reasonably practicable, provide education for special education needs at ordinary public schools and provide relevant educational support services for such learners" (Republic of South Africa, 1996a, p. 10). This moreover demonstrates that schools and teachers need to have adequate skills and resources to be able to implement inclusive education principles effectively in the classroom with learners who are visually impaired. Despite the acknowledgement that education is a basic human right and is even outlined in the Constitution, there are still barriers to education. This is particularly relevant to learners who are visually impaired (Fish-Hodgson & Khumalo, 2015b).

2.3.1.1 Inclusive education policy development in South Africa

Since the transformation of the education system, two key documents have been drafted that outline the values and principles of inclusive education. They are each expanded on briefly.

2.3.1.1.1   *White Paper on Education and Training, 1995*

White Paper 1 (1995) recognised that special needs education services were not inclusive in the former education system, and where special education services were required that at least there was inadequate support regardless of whether it was in mainstream or specialised education programmes (Department of Education, Republic of South Africa, 1995). The National Commission on Special Needs Education and Training (NCSNET) and the National Committee for Education Support Services (NCESS) was formed by the Ministry of Education in 1996 (Department of Education, Republic of South Africa, 1995) to propose strategies to address these challenges. The joint NCSNET and NCESS report found that there was a wide range of learner needs that existed and that those needs were not limited to the learner but that barriers to learning moreover existed at a systemic level (Pather, 2011). The report went on to explain that exclusion was a result of the needs of the learner not being met due to barriers that existed in the learning environment (Department of Education, Republic of South Africa, 1995).

2.3.1.1.2   *White Paper 6 on Education and Training, 2001*

The White Paper 6 on Education and Training: Building an Inclusive Education and Training System was published in 2001 (Department of Education, 2001). The policy provides a framework for developing an education system that functions to foster an education system that serves to eliminate the different levels of systemic barriers to learning based on the findings of the NCSNET/NCESS report. The commission had found that disability was one of the main barriers to learning that excluded learners from the education system (Pather, 2007).

The development of the policies indicated that that there had been a general and progressive move to an inclusive education system. The policies sought to highlight challenges that had previously been identified and to provide a blueprint for the education system to follow in compliance with the principles they contain. In the same way, it provided teachers in full-service schools and special schools with an opportunity to gain a deeper understanding and expand their knowledge of what was expected and required of them as they had been identified as the main implementers in the classroom.

2.3.2 LITERATURE ON INCLUSIVE EDUCATION IN SOUTH AFRICA

There have been several studies on inclusive education in South Africa. In conducting my literature review, I found that there was a wide spectrum of research. This ranged from articles that focused solely on policy to research that looked at inclusive education as a form of social justice. Currently, there are no studies in South Africa that have a specific focus on inclusive education and visual impairment. In this section I discussed three articles in the literature that I had come across in my research to highlight the trend regarding inclusive education research in South Africa.

A study by Dreyer (2017) found that although there had been vast improvements in the access to basic education in South Africa, there was still a lack of meaningful transformation in the education system in relation to competence in the support it offers learners in primary school classrooms who had been identified as having high-level needs. The study found that there were no adequate structures in place to provide in the needs of learners who required high-level support. In addition, teachers and learning support teachers identified that learners who experienced barriers to learning did not receive an adequate standard of instruction in a manner that was suitable for their needs. This exemplified the gap that exists between the current policy and its implementation. However, this particular study was done in the Western Cape and employed a mixed-methods design, which might have influenced this outcome.

A study by Makhalemele and Payne-Van Staden (2018) followed a similar route in examining teachers' ability to enhance their self-efficacy in relation to the support they should be receiving from the District-Based Support Team (DBST). This study was carried out in the Gauteng and Free State provinces. The outcome of the study showed that the DBST in the two provinces did not provide sufficient support to raise the self-efficacy of teachers.

The two aforementioned studies demonstrated that teachers experienced challenges with implementing inclusive education due to their perceived lack of competence and apparently not having enough support to increase their knowledge and skills set for the benefit of the classroom. However, neither study directly detailed the specific

challenges with implementation that the teachers experienced but rather addressed contextual factors that contributed to barriers in implementation.

Another study, one by Engelbrecht et al. (2015), examined the extent to which teachers were inclusive in their classroom practices and how their beliefs and attitudes, and sense of self-efficacy, played a role in how they responded to diversity in the classroom. Similarly, like my study, it formed part of a larger study, although it differed from the methodology that was used. Whereas in this study a focus group and semi-structured interviews were used, for my study I employed PAR, participant observation, field notes and a research diary. The study by Engelbrecht et al. (2015) had a broad approach to diversity and did not highlight a specific barrier to learning that teachers encountered in the classroom. Terms such as "barriers to learning," "weak learners" and "slow learners" were used to describe the range of learners in the classroom. Thus the study did not specifically name the strategies that teachers used in the classroom but rather focused on the development of inclusive education and its outcomes.

This section demonstrated the lack of specificities in the use of implementation strategies that teachers used with learners who experienced barriers to learning in the classroom. Furthermore, the studies I mentioned did not include learners who were visually impaired. This therefore provided further motivation for my study as I sought to highlight a specific barrier to learning, namely learners who are visually impaired, and to examine the implementation strategies used by teachers in both full-service schools and special schools to overcome this barrier. Moreover, the multiple sources of data-collection which I employed in my study assisted me with accounting for the conformability of my findings.

2.4   IMPLEMENTATION STRATEGIES FOR INCLUSIVE EDUCATION

2.4.1   COUNTRIES THAT HAVE STUDIES THAT ARE FOCUSED ON VISUAL IMPAIRMENT.

2.4.1.1 United Kingdom

In the United Kingdom, visual impairment is considered to be a low incidence disability and very few learners use braille as their medium of learning literacy (Roe,

Rogers, Donaldson, Gordon, & Meager, 2014). According to Keil (2012) most learners who are visually impaired attend mainstream schools and often require support (Roe et al., 2014). This support is provided in the form of high-level qualified teachers for the visually impaired (Roe et al., 2014) as they are the only learners who are using braille in the classroom. Therefore these specialist teachers are required to have appropriate knowledge and skills about the various implementation strategies used specifically for learners who are visually impaired. The specialist teachers teach learners who are blind to read and write in braille. In addition to this, they employ the use of assistive technology for learners who have low vision (Ravenscroft, 2015). Qualified teachers for the visually impaired are not required to be at school every day but undertake regular visits to provide support to those learners who may require it (Roe et al., 2014). School visits by qualified teachers for the visually impaired are dependent on their case loads, the situation in the school and guidelines set out by local authorities.

2.4.1.2 Australia

Similar to practices found in the United Kingdom, Australia has employed a similar strategy for including learners who are visually impaired. Since the global shift towards an inclusive education system, learners who are visually impaired primarily attend mainstream schools (Media Access Australia, 2013). Australia uses specialist visiting teachers for learners in mainstream schools who are visually impaired to support the inclusive education process for these learners (Sapp & Hatlen, 2010; Statewide Vision Resource Centre, n.d.). The role of the visiting teacher in supporting learners with visual impairment is to implement the expanded core curriculum, to assess learners to ensure that the appropriate learning materials are used to accommodate their specific type of visual impairment and to provide direct teaching, where necessary, of braille skills to blind learners and to educate learners with low vision in the use of assistive technology (Vision Australia, 2015). In some instances learners who are blind may also benefit from using screen-reader software that allows the learner to listen to the learning material (South Australian School for Vision Impaired, 2018).

From the aforementioned examples of implementation strategies, it can be seen that countries that are more developed have used additional support for visually impaired

learners in the form of specialist teachers who come into the classroom to assist mainstream school teachers. However, in South Africa, unlike the case in the United Kingdom, visual impairment is the most prevalent disability (Statistics South Africa, 2011). In addition to this, only a limited number of the estimated number of learners with visual impairment has access to what may meet their educational needs. Despite having access to education, there are still concerns whether the needs of these learners are met sufficiently, especially those learners in the full-service schools. This will be examined in more detail in the next section.

The central role of the specialist teachers is to provide suitable implementation strategies which promote the inclusion of learners who are either classified as blind or having low vision. Although it is not a daily practice, teachers have a certain level of support through collaboration with the classroom teacher in implementing inclusive education with learners who are visually impaired. Thus the onus of implementing strategies does not rest solely on the mainstream classroom teacher but the teachers are also afforded the opportunity to receive further support in respect of visually impaired learners in the classroom.

2.4.2   IMPLEMENTATION STRATEGIES IN SOUTH AFRICA

2.4.2.1 Full-service schools

White Paper 6 (Department of Education, 2001) states that full-service schools are tasked with making provision for the different learning needs of all learners in the school. Full-service schools are designed to embrace the principles of inclusion, which are outlined in the current inclusive education policy (Department of Education, Republic of South Africa, 2005). In the department's 20-year plan for inclusive education, it was outlined that at least one school in 30 districts would be selected to become full-service schools, after which a further 500 schools would be selected (Department of Education, 2001, 2010a). According to Engelbrecht et al. (2016) full-service schools are expected to provide essential human resources in the form of adequately trained teachers, physical resources and opportunities for professional development to enable the accommodation of learners with mild to moderate learning needs (Mfuthwana & Dreyer, 2018; Pather, 2011). This involves flexibility in teaching strategies and learning. The premise of a full-service school is that support for

learners should be provided in the school to facilitate the full inclusion of learners who are experiencing barriers to learning (Department of Education, Republic of South Africa, 2005).

Moreover, full-service schools are positioned to act as sites of support for neighbouring schools in the community. They are intended to emulate the principles of inclusion to provide a blueprint for other schools with a view to becoming inclusive schools through interaction and the exchange of knowledge by means of sharing practical examples as well as the provision of advisory assistance (Department of Basic Education, Republic of South Africa, 2010a; Department of Education, Republic of South Africa, 2005). They are intended to promote a culture of increased participation or at least have the potential to develop the capacity for increased participation; to be capable of providing appropriate educational support to learners regardless of disability; to seek to ensure accessibility to quality education for all learners and adopting a holistic approach towards development by keeping up a spirit of collaboration with community members (Department of Basic Education, Republic of South Africa, 2010a).

To support the mandate of the full-service schools the Department of Education created the DBST and institution-level support teams (ILST), also known as the school-based support team (SBST), who are given the responsibility of training and supporting teachers in the implementation of inclusive education. The ILST is furthermore expected to assess, identify and support learners through the development of a learning programme that suits the learning needs of the learner (Department of Education, 2001). The DBST is required to offer support to the ILST and the teachers in schools as well as supply full-service schools with adapted learning materials and assistive devices (Department of Education, Republic of South Africa, 2005).

Thus far the department has exceeded their goal of establishing 500 full-service schools as the current number stands at a total of 715 (Department of Basic Education, 2017). Despite this increase in the number of full-service schools, research has shown that teachers in full-service schools are still challenged by having to use strategies that implement inclusive education in the classroom (Dreyer, Engelbrecht, & Swart, 2012; Mfuthwana & Dreyer, 2018; Nel, Tlale, Engelbrecht, &

Nel, 2016). Furthermore, the ILST teams are not functioning at a level that is expected in contributing to implementation. Studies have shown that teachers who comprise the ILST and the DBST lack adequate knowledge, which would enable them to contribute to teacher development, thus limiting teachers' ability to implement meaningful strategies in the classroom effectively (Dreyer, 2013; Mfuthwana & Dreyer, 2018).

Teachers in full-service schools still rely heavily on separate classrooms that specialise in giving support to learners who are experiencing barriers to learning (Engelbrecht et al*.,* 2016). This finding contradicts the role of the full-service school as a model of inclusion and shows that there is still a challenge with the provision of adequate learning material and suitable professional teacher development, thus contributing to inadequate implementation strategies. There was, however, no specific literature pertaining to implementation strategies that teachers in full-service schools used with learners who are visually impaired. This is a further reason why this study was important and relevant. It could show, if there were any, the strategies that teachers currently used with learners who are visually impaired.

2.4.2.2 Special schools

As previously mentioned, special schools are required to provide high-level support to learners experiencing barriers to learning. Currently there are 464 special schools in South Africa (Department of Basic Education, 2017). The Department of Basic Education (2014a) outlined that all special schools should give adequate consideration to human resource needs, the need for and allocation of resources, appropriate implementation strategies based on learners' needs along with the infrastructure of the school. Therefore, special schools are expected to ensure that they are fully equipped to offer the necessary support, as indicated by the specific type of support they claim to provide. To add to this, they are positioned to act as resource centres for neighbouring schools, along with full-service schools and the DBST, to provide teachers with professional development and learners with appropriate support (Department of Education, 2001, 2005).

In a study done by Maguvhe (2005) it was reported that despite the role of special schools to provide high-level support to learners with visual impairment, they still

lacked the necessary human resources and materials for appropriate implementation strategies. In addition to this, in a study by Wiazowski (2012) a similar outcome was found in that a special school for the blind still lacked basic equipment such as a braille printer, therefore limiting the range of implementation strategies that could support teachers in dispensing the correct learning material for learners who are blind. The organisation Blind SA (https://blindsa.org.za/) stated that many of the special needs schools for learners who are blind or have low vision are not provided with learning materials in accessible formats, such as braille or an enlarged font. Moreover, they lacked resources such as braille writing machines, resulting in learners having to share the machines, or not having access to assistive technology and teachers who are not adequately trained in applying the appropriate implementation strategies (Nair, 2019).

The Department of Education's report on the progress with the implementation of White Paper 6 showed that special schools were not meeting the expectations in respect of providing adequate implementation strategies. It was reported that there were still major concerns about the delivery of the curriculum to learners in special schools. Evidence has shown that minimal effort has been made to ensure that learners in special schools receive adequate instruction in the content of the curriculum (Department of Basic Education, Republic of South Africa, 2015). The aforementioned indicated that teachers may as a consequence not be meeting the needs of learners with visual impairment adequately, which at the same time hampers the ability of teachers to implement inclusive education effectively.

2.4.3 IMPLEMENTATION STRATEGIES USED WITH LEARNERS WHO ARE VISUALLY IMPAIRED IN SOUTH AFRICA

White Paper 6 states that regardless of the needs of the learner, the curriculum should be accessible to all (Department of Education, 2001). The Department of Basic Education (2010b) laid down a framework of guiding principles for the teaching strategies that would best ensure the inclusion of all learners in the classroom in the Guidelines for Inclusive Teaching and Learning policy (Department of Basic Education, 2010b). The guidelines postulated by the policy are intended for teachers at both full-service and special schools.

Although there is a lack of literature that explicitly details implementation of inclusive education in South Africa, this policy aims to assist teachers with ways in which they may implement the principles. Furthermore, the policy outlines and details specific strategies that teachers could use to include learners who are visually impaired. As has been said, learners who are visually impaired need specialised intervention and support to access learning materials. The underlying principle of adaptations is ensuring that vision-impaired learners are able to access and demonstrate knowledge and skills at a level equal with their peers who are not experiencing barriers to learning (Department of Basic Education, Republic of South Africa, 2010b; Sahin & Yorek, 2009).

2.4.3.1 Assistive technology

Assistive technology is a field made up of different products, resources, strategies and methodologies that aim to enhance the functionality of people with visual impairment (Ahmad, 2015; Alves, Monteiro, Rabello, Gasparetto, & Carvalho, 2009). Information and communication technology is the principal resource in assisting learners who are visually impaired (Mokiwa & Phasha, 2012). Assistive technology devices that can be used in the classroom include screen-magnifying software, speech synthesisers, screen readers, and computer software that can change the size and colour of the font to enable a visually impaired learner to see more clearly.

2.4.3.1.1 *Screen magnifiers*

A screen magnifier is a type of software that enlarges the print and other text on the screen of a computer. This helps to make tasks such as reading and writing for learners with low vision easier and to enable individuals who are visually impaired to navigate between different tasks on a computer (Mulloy, Gevarter, Hopkins, Sutherland, & Ramdoss, 2014).

2.4.3.1.2 *Speech synthesisers*

Speech synthesisers read text aloud for learners who are visually impaired. Speech synthesisers enable learners to use their auditory skills to take in the information that

is presented to them. Speech synthesisers can be utilised by learners who are either blind or have low vision (Campos, Goncalves, & De Araujo, 2017).

2.4.3.1.3 *Screen readers*

Screen readers are programs that allow an individual who is visually impaired to access text that is written on the screen of a computer through speech synthesizers. The screen reader reads out loud what is written on the computer screen for the learner and is therefore appropriate for learners who are blind and for those who have low vision (Taylor, 2016).

2.4.3.2 Braille

Braille continues to remain the primary mode of communication for individuals who are blind (Njue, Aura, & Komen, 2014). It is a system that enables them to read and write through the use of touch. This is done by the braille reader, in passing their fingertips over a unique configuration of dots which represent the braille alphabet (Roth & Fee, 2011). The use of braille helps learners to acquire important skills such as reading and writing. Without the use of braille learners who are blind and those who have progressive blindness would otherwise not have any other medium to enable reading and writing. This would in effect lead to exclusionary practices in the classroom, and the principles of inclusive education policy would not be fulfilled.

In order to incorporate braille in the classroom teachers must also be literate in braille and able to teach learners how to read and write in braille (Fish-Hodgson & Khumalo, 2015a; Waizowski, 2012). However, in a study by Sikanku (2018) in Ghana it was found that teachers experienced including learners who were visually impaired in the classroom as challenging because they were not adequately trained in the use of braille.

2.4.3.3 Adapting written texts

In order to enable learners with visual impairments to participate in learning, written texts need to be adapted to accommodate them. According to the guidelines on adaptations for learners with visual impairment (Department of Basic Education, 2013), teachers may adapt materials by increasing the font, making the text bold,

adding colour, adjusting the space between words and increasing the contrast. However, the adaptations that are made depend on the learners' specific visual acuity and their preferences (Department of Basic Education, Republic of South Africa, 2010b; Mastropieri & Scruggs, 2010).

With learners who have low vision it is advised that teachers do not write notes on the chalkboard but that they should rather prepare notes in advance, using the appropriate adaptations for the learners (Department of Basic Education, Republic of South Africa, 2010b). Furthermore, teachers may also alter the lines on writing paper by making them bolder and thicker so that a learner who is visually impaired could see them (Department of Basic Education, Republic of South Africa, 2010b).

2.5   THEORETICAL FRAMEWORK

I relied on the work of Lev Vygotsky's theory of learning, which is rooted in sociocultural theory (Vygotsky, 1978). Sociocultural theory posits that learning and development is a process that is mediated by cultural tools and artefacts as well as language and activities which are seen as purposive (Lantolf, Thorne, & Poehner, 2015; Ratner, 2015). These mediators are best understood when looked at in their historical setting (Lantolf et al., 2015). Furthermore, sociocultural theory suggests that the development of higher mental processes in a child rely on social interactions through more knowledgeable others, such as other adults, teachers, peers and family (Borchelt, 2007; Kozulin, 2003; Lantolf et al., 2015). Thus, according to Vygotsky, cognitive processes, which occur at a social level first, are then internalized into the way an individual thinks (Fernández, Wegerif, Mercer, & Rojas-Drummond, 2002). In simple terms, sociocultural theory means that in order to understand the way in which an individual thinks and learns, we must look at the context in which the thinking and learning occurs.

In the context of the classroom, sociocultural theory states that an environment in which there is rich interaction between teachers and learners facilitates opportunities for learners to create their own meaning and understanding when interacting with others (Doolittle, 1997; Ryu & Lombardi, 2015). Furthermore, it is an environment in which the teacher's role is to provide guidance to the learners to enable them to understand the content meaningfully (Siyepu, 2013). One of the most well-known

concepts of sociocultural theory is the zone of proximal development, which involves scaffolding and mediation. These concepts are discussed in more detail in the next section.

Lev Vygotsky defined the zone of proximal development as the following:

> "…the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

This represents the acquisition of knowledge and skills, what a learner is able to do with assistance, in comparison with what they are able to do independently (Clapper, 2015; Vossoughi & Guitérrez, 2017). The concept of the zone of proximal development embraces the assumption that a learner will learn best when working in collaboration with others (Borchelt, 2007; Shabani, Khatib, & Ebadi, 2010; Siyepu, 2013).

In the zone of proximal development in the sociocultural theory of Vygotsky the role of the mediator plays an integral role (Eun & Lim, 2009). Mediation has to do with the role that others play in the learning process of the learner (Christmas, Kudzai, & Josiah, 2013; Mutekwe, 2018; Simeon, 2016; Thompson, 2013). However, in sociocultural theory the role of mediation is not limited to other people but also includes the use of tools that are employed to enhance the learning and development of learners in the classroom (Mutekwe, 2018). Tools may refer to physical objects such as computers, videos, wall displays and psychological tools, for example, language (Thompson, 2013). Social interaction with others influences development mainly through the use of language. The process leads to individuals internalizing behaviours and the language that is used between those they interact with (Eun & Lim, 2009). In the context of this study, it was imperative to understand the various ways in which teachers made efforts to ensure the learners who are visually impaired are included in the classroom.

The zone of proximal development is closely linked to the concept of scaffolding (Vygotsky, 1978). Scaffolding is known as an instruction strategy that provides

assistance to learners at the beginning of the task and is then gradually removed until the task can be performed independently (Malik, 2017; Smagorinsky, 2018). The process of scaffolding involves the teacher acting as the mediator and lending support to the learner in the introduction to and learning of new concepts (Gonulal & Loewen, 2018).

Therefore, in relying for my study on a theoretical framework that focuses on social learning processes in the classroom I aligned myself with the aforementioned stance. Furthermore, the classroom setting would require appropriate teaching strategies that factored in mediation, which would take into account the needs of the learner. In the context of the learner who is visually impaired the aforementioned strategies included detailed descriptions of diagrams for learners who are blind and the use of assistive technology devices for learning, which could be used for both learners who are blind and learners with low vision (Hewett, Douglas, McLinden, & Keil, 2016; Nahar, Jaafar, Ahamed, & Kaish, 2015; Walczak & Fryer, 2017). Teachers in this study were seen as the experts as they interacted with learners on a daily basis. Moreover, they are viewed as being more knowledgeable, and therefore attuned to the needs of their learners. Inserted below is an image that illustrates the sociocultural theory and its relationship to inclusive education and its implementation.
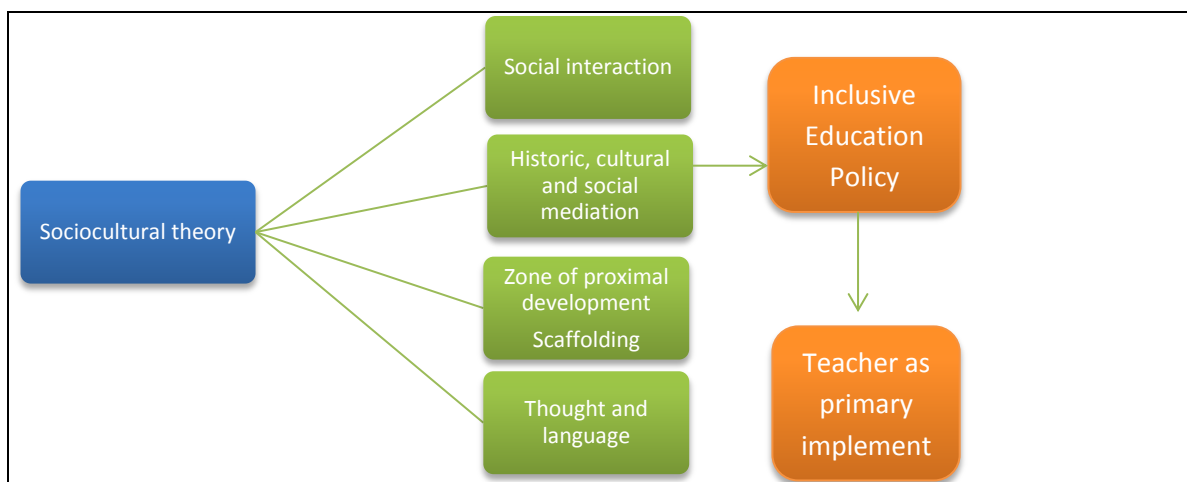
Figure 2.1:   Relationship of the theoretical framework and the current study

2.6   CONCLUSION

In this chapter I gave an overview of the literature relevant to the topic under study. I looked into the prevalence of visual impairment globally and in South Africa. I moreover gave an overview of the development of inclusive education internationally and looked at relevant policies which promoted its adoption around the world. I provided a close examination of inclusive education in South Africa and some of the challenges and limitations in the research regarding its specific implementation. Finally, I gave an account of the different ways in which inclusive strategies could be promoted in the classroom through their teaching methodologies. In the next chapter, I included a detailed account of the research methodology that guided my study.

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Chapter 3
Research Methodology

3.1   INTRODUCTION

In this chapter, I discuss the research methodology that I employed for my study. I begin by explaining the meta-theoretical and research paradigms on which the study was based. I then go on to give a detailed overview of the research process by explaining the sampling methods, the data-collection and -documentation techniques. The steps which were taken for thematic data analysis and interpretation are explained comprehensively. There is a focus on the ethical procedures that were followed to ensure that my study complied with ethical guidelines.

3.2   EPISTEMOLOGY: INTERPRETIVIST

In order for me to understand the implementation of inclusive education policy by teachers with learners who are visually impaired, I used the interpretivist paradigm. An interpretivist views the world as having multiple realities which are shaped and constructed by social actors, who develop their own meanings and understandings of their experiences as they occur (Wahyuni, 2012). My role as the researcher was to understand the specific context of the teachers from their subjective point of view rather than from the perspective of an objective observer (Mack, 2010; Ponelis, 2015). As the focus of interpretivist researchers is primarily on meanings, researchers often use various methods to obtain the multiple views of participants in a specific context (Dudovskiy, 2018). The core characteristic of the different methods I followed was the opportunity I had as researcher to engage and interact with participants in their natural settings (Guba & Lincoln, 1994; Kivunja & Kuyini, 2017; Wahyuni, 2012).

Through the interpretivist lens of engagement, I was able to explore the real-life contexts of teachers, through direct involvement in their environment, which enabled me to gain insight into the teaching strategies they used in the classroom with learners who are visually impaired. My data-collection methods of observation, field notes and co-facilitation of PAR-based workshops provided me as the researcher

with opportunities to gain a better understanding of the teachers' experience (Al Riyami, 2015; Ponelis, 2015).

An advantage of using interpretivism in this study was that participants were able to express their views openly because in the interpretivist paradigm the assumption is that constructions of reality are based on people's own "preferences and prejudices" (Schutt, 2009, p. 92), as well as their "views, feelings and perspectives" (Wellington & Szczerbinski, 2007, p. 81). Therefore, it was imperative that I, as the researcher, respected and appreciated the differing viewpoints of the teachers in both the full-service schools and special schools as different people understand and interpret situations and experiences differently (Schutt, 2009).

A potential challenge of interpretivism was that I could potentially have had an influence on the atmosphere of the setting in which I was present (Al Riyami, 2015). As I was observing teachers in the classroom during their lessons, they could have altered their behaviour from the way they normally behaved due to my presence in the classroom. My study was part of an existing, larger project, and it was fortunate that good rapport had already been established between my co-researchers and the staff members of the full-service and special schools where I collected my data. My co-researchers had engaged with the principals and some of the teachers of the different schools through school visits, which provided them with information packs about the research prior to the actual data-collection process. Furthermore, following proper ethical procedures by means of a thorough explanation of the research process, allowing questions for clarity and gaining consent assisted with developing a trusting relationship between the participants and me as researcher (Lopez-Dicastillo & Belintxon, 2014).

3.3   ONTOLOGY: QUALITATIVE

For my study, I chose the qualitative methodological approach as I deemed it a suitable choice for my study. The qualitative methodology allowed me as the researcher to observe and study teachers in their context (Creswell, 2007). Furthermore, it enabled me to have a deeper understanding of how the different settings of full-service schools and special schools influenced their implementation strategies.

Qualitative methodology has characteristics that are suitable for the interpretivist paradigm of my study (Yavuz, 2012). Qualitative studies are characterised by the belief that multiple realities or perspectives exist in the world and that there is no single reality (Kielmann, Cataldo, & Seely, 2012). Another characteristic is that there is interaction between participants and the researcher. The behaviour of participants is observed where it would occur naturally, without recreating it or taking it out of its natural context (Dooly & Moore, 2017; B. Hancock, Ockelford, & Windridge, 2009; Kielmann et al., 2012).

As I relied on qualitative methodology, which I had selected for my study, I visited teachers in full-service schools and special schools and in so doing deepen my understanding of the implementation strategies. I had access to their world and was able to interpret their actions and behaviours relating to how they increased accessibility for the visually impaired to the curriculum (Denzin & Lincoln, 2005). I ensured that my primary focus was on the personal accounts expressed by the teachers based on their experiences in the classroom when teaching learners who are visually impaired. I therefore did not enter the research process laden with my own preconceptions. This open-mindedness allowed for the discovery of new insights and knowledge. These new insights provided me with the ability to identify themes relating to common implementation strategies.

A potential challenge that presented itself in the study was the highly subjective nature of qualitative research. As the researcher, I had to be cognisant of any personal assumptions during the course of the study. I constantly had to engage in self-awareness and regularly do introspection about any influence I, as researcher and former teacher, might have had on the research process. My personal subjective views were circumvented through the use of a researcher diary, in which I recorded my subjective notions.

3.4   RESEARCH METHODS

3.4.1   SELECTION OF CASES AND PARTICIPANTS

My study formed part of a larger project, thus the cases had already been selected. In purposive sampling, data are generated by participants who are "easily accessible" (Etikan & Bala, 2017, p. 2) to the researcher.

The following selection criteria applied to the selected participants:

- Teachers who are qualified
- Teachers working in either a full-service or special school
- Teachers teaching learners who are visually impaired
- Teachers who are implementing inclusive education policy

An advantage of using purposive sampling is that the researcher seeks participants for the experience and knowledge they possess as they are able to provide the information needed by the researcher (Tongco, 2007). In the context of this study, teachers working in full-service schools and special schools were identified as being able to give rich information about the implementation of inclusive education policy. Since teachers practice inclusive education on a daily basis, they were treated as experts with first-hand experience of what happens in the classroom.

A potential drawback of purposive sampling is that it is prone to researcher bias due to the researcher being responsible for selecting the participants for the study. However, the participants selected specifically for this study remained the authority figures with the body of knowledge throughout the study (Sharma, 2017). For the larger study there were a total of 48 participants ($n = 48$) from Pretoria in Gauteng who participated. For this study, the same number of participants was used for the larger study. Table 3.1 below shows the total number of participants who were involved in the larger study in Gauteng.

Table 3.1:   Participant information relating to each school in the study

School	Total number of participants per school	Age group of participants					Type of school
		20–30	31–40	41–50	51–60	61–70	
School A	17	3	5	5	4		Full-service school
School B	14	2	3	5	4		Full-service school
School C	10		3		5	2	Special school
School D[1]	7	1	3	3			Special school
Total number of participants	48						

3.4.2   RESEARCH DESIGN: MULTIPLE CASE STUDY

A case study design can be used to produce knowledge of and insight into a phenomenon and how it relates to its natural environment (Crowe, Creswell, Robertson, Huby, Avery, & Sheikh, 2011). A case study aims to explore how the actions of people are influenced by the environment in which they live. Furthermore, a case study is a form of investigation that explores a phenomenon that is current, especially when there are boundaries between the phenomenon and the real-life contexts (Yin, 2009). Yin (2009) further emphasises the use of multiple sources for data collection when conducting case study research. Thus, case study research aims to produce a deeper understanding concerning the contemporary phenomena in the study.

For this specific research a multiple case study was selected. A multiple case study is often used specifically to develop or promote understanding of a particular issue (Gordin, 2006). The case itself is not the primary concern but instead plays a supportive role in facilitating the understanding of something else, and therefore the issue rather than the case is dominant (Stake, 1994). The choice of case is often to advance the understanding of the issue that is being studied (Grandy, 2010). In

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[1] School D had a total of two PAR workshops that fell over a two day period.

addition to this, a multiple case study often attempts to generalise the case study (Stake, 1994). Therefore, in this instance the multiple case study was used to assist me with answer the "how" question relating to the implementation strategies that teachers use (Yin, 2009).

The multiple case study was appropriate for this study as my interest was in exploring the strategies used by teachers to implement inclusive education policy with learners who are visually impaired. In light of this study, the cases selected were teachers who were working in full-service and special schools, teaching learners who were visually impaired. Thus the selected cases were able to provide thick and rich description to allow me as researcher to gain insight into their experiences of the implementation of inclusive education policy (Laframboise & Shea, 2009).

Moreover, case studies offer insight into challenges that are experienced where there are gaps that exist in policies and show why certain implementation strategies are preferred to others (Crowe et al., 2011; Yazan, 2015). The focus of this particular study was on examining the implementation of the principles of inclusive education policy as outlined in White Paper 6 (Department of Education, 2001). Therefore, it enabled me as the researcher to gain insight into the teaching strategies the teachers used specifically with learners who were visually impaired.

An advantage of using a multiple case study was that I was able to study teachers in their context, that is, in the classroom. I was able to observe them in their natural setting to gain insight into their teaching strategies as the issues relevant to this study largely depended on their context (Karlsson, 2016). For this study, observation of the teachers therefore enabled me as the researcher to identify what their common needs were and some of the differences and similarities in the implementation strategies employed by teachers in full-service schools and special schools.

A disadvantage of using a multiple case study was that it created more opportunity for researcher bias (Starman, 2013). As the researcher, I was immersed in the settings in which the teachers worked, thus leaving my interpretation of events subject to my own bias and assumptions. I nevertheless actively engaged in a process to identify my own bias throughout the research process to avoid any

predispositions and assumptions I might have had going into the study (D. R. Hancock & Algozzine, 2006).

3.4.3 DATA COLLECTION AND DOCUMENTATION

In employing the multiple case study research design, I decided to use PAR, observation, field notes, and the use of a researcher diary as my data-collection methods. Triangulation was employed to gain a comprehensive understanding of the answers to the research questions of the current study (Morse, 2015; Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Cope, 2014)

3.4.3.1 PAR-based workshops

Participatory action research is a process in research that allows for constant participation and co-learning between the researcher and the participants (Morales, 2016; Whitman, Pain, & Milledge, 2015). It involves a process of conditions being created that might lead to new possibilities and transformational outcomes, and furthermore invoke self-reflection (Wittmayer & Shäpke, 2014). Moreover, the phenomenon being studied is often co-defined by participants and the belief is that the solution could be found within the confines of their natural setting without generalising outside of their specific context (Morales, 2016). Thus, PAR is characterised by a shared responsibility between the researcher and the participants in the co-creation of knowledge as well as co-ownership of the research findings (Baldwin, 2012). In addition to this, it seeks to transform the power relationships that guide traditional research (Raynor, 2019). To facilitate the PAR process it is important for the researcher to enter into the research process open and free from a preconceived notions or assumptions that they may previously have had (Kidd, Davidson, Frederick, & Kral, 2018). Table 3.2 below indicates an overview of the field visits that were done during the data-collection process.

Table 3.2: Overview of field visits

Date	Number of PAR-based workshops	Number of participant observations	School	Province
5 February 2018	1	3	Special school	Gauteng
7–8 February 2018	2	1	Special school	Gauteng
13 February 2018	1	0	Full-service school	Gauteng
14 February 2018	1	2	Full-service school	Gauteng

During the course of the PAR-based workshops, participants worked in groups and discussed the questions that were on the posters (see Appendix C). Each school that participated had its own respective PAR-based workshops. On the first poster, participants were asked to discuss what they could do for learners in the classroom who were visually impaired and to explain what they thought learners who were visually impaired needed. During the discussion, participants were required to write down their responses on the poster. The second poster that they were given sought to examine what they believed teachers needed regarding knowledge, skills and resources to achieve implementation with learners who were visually impaired.

For this study an advantage of the aforementioned exercise was that the posters with questions pertaining to visual impairment enabled teachers in full-service and special schools to express their knowledge of the implementation of inclusive education policy with learners who were visually impaired. Furthermore, it facilitated a process for the transfer of knowledge not only between researcher and participant but also among the teachers themselves. Thus teachers were able to learn from each other about strategies they might not have been aware of which they could implement in their classrooms. Photographs 3.1 and 3.2 show some of the posters which were used during the PAR-based workshops.
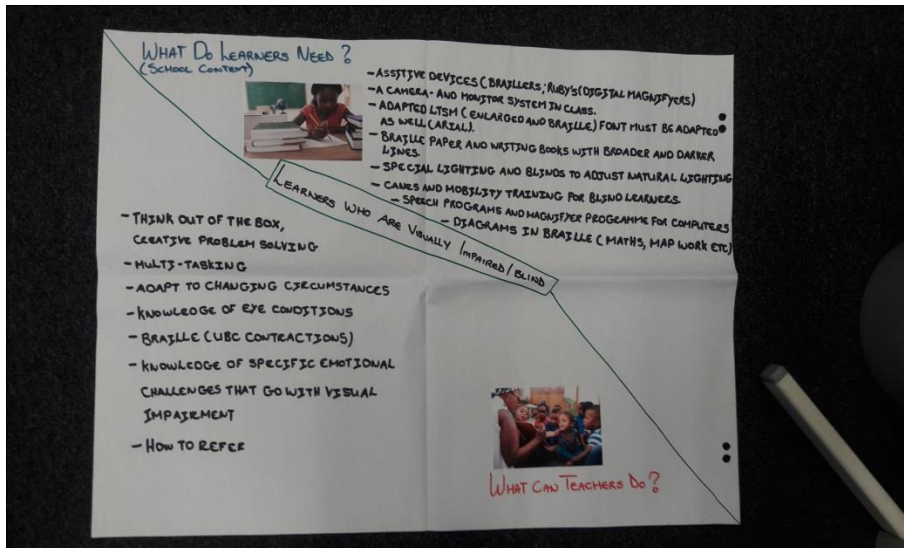
Photograph 3.1   The first poster that was given to participants during the PAR-based workshops (05.02.2018)
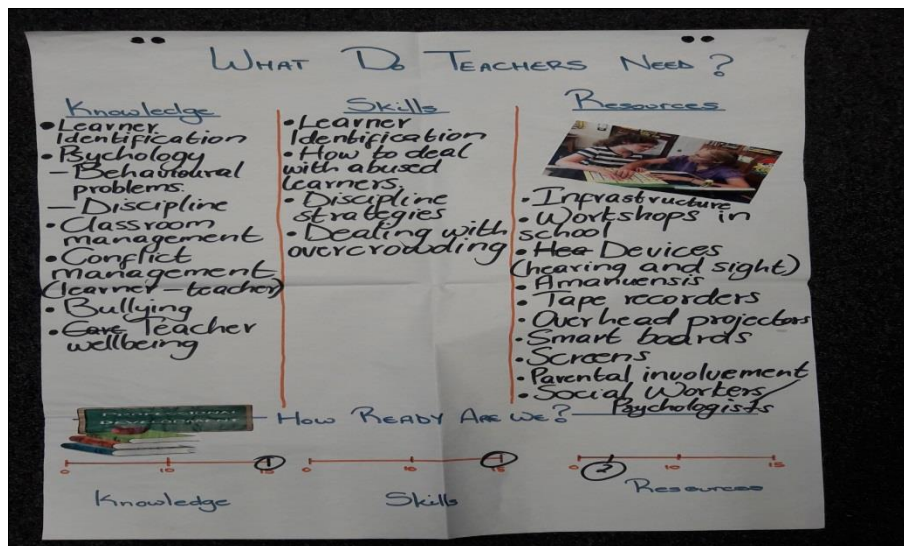
Photograph 3.2   The second poster that was given to participants during the PAR-based workshops (13.02.2018)

A common criticism of using PAR in the science community is that it is a methodology that lacks scientific rigour (MacDonald, 2012). PAR is a methodology that follows more of an open-ended research design, thus researchers who follow more traditional research designs often question its reliance on participants' voices rather than on hard data (Young, 2006). In this study I ensured its trustworthiness by adhering strictly to ethical guidelines and by regularly engaging in reflection with the

research participants and undergoing debriefing with my supervisors and co-researchers throughout the research process. Photographs 3.3 and 3.4 depict some of the PAR-based workshops that took place at the schools.

Photographs 3.3:   Participants engaged in discussion during PAR-based workshop (05.02.2018)

Photograph 3.4:   Participants engaged in discussion during PAR-based workshop (05.08.2018)

3.4.3.2 Participant observation

Observation is the recording of events, the actions of individuals, and any objects for research in a specific social context (Marshall & Rossman, 2006). Observation is distinctive in that it allows the researcher the opportunity to generate data that occurs naturally in social situations (Mansell, 2011; Wilkinson & Birmingham, 2003). Participant observation requires that the researcher becomes involved in the social setting of the participants and makes descriptions of the context of the study (Mackellar, 2013). In addition, using cameras to capture participants' behaviours and actions means that the photographs produced an extension of the researcher's senses, enabling the researcher to relive the context of the study afterwards (Baker, 2006; Laurier, 2010).

During the visits to the schools, I was permitted entry into classrooms in the full-service and special schools to observe the ways in which teachers taught (see Appendix D). I was provided with an observation guide, which enabled me to be able to note down what I observed in the classroom (see Appendix H). The participant observations took place on the same day for which the PAR-based workshops were scheduled to take place. There were two schools, both full-service schools, where the PAR-based workshops took place in the afternoons and two special schools, where the PAR-based workshops took place in the morning. I was able to complete two participant observations at one of the special schools after a single PAR-based workshop. I was also able to attend one observation session at one of the full-service schools in the morning, before the PAR-based workshop, which had been scheduled for the afternoon. The other participant observation session took place on the first day, in the morning after the first PAR-based workshop. No participant observation took place on the second day, when the second PAR-based workshop due to time constraints. There was no participant observation session at one of the full-service schools.

An advantage of participant observation was that I was able to immerse myself fully in the role of observer, in so doing developing a thorough understanding of the implementation of inclusive education with learners who are visually impaired. I was able to experience first-hand (Wilkinson & Birmingham, 2003) the different perspectives of teachers about the knowledge, skills and resources used and

required in the full-service schools and special schools in their real-life settings (Iacono, Brown, & Holtham, 2009). It enabled me to gain insight into the ways in which they overcame any challenges they experienced in the classroom.

A potential drawback of participant observation was observer bias. It was possible that my own attitudes, assumptions and beliefs could have had an impact on my interpretation of the observations I had made during lessons. Participant observation can potentially lead to the loss of objectivity on the part of the researcher (Ary et al., 2002). In overcoming this challenge, I engaged in a reflexive process through regular debriefing sessions with my supervisor during the data-collection process. This helped to bring to light any loss in objectivity I might not have identified had I not done so.

3.4.3.3 Field notes

In my data-collection activities I relied on field notes to record my observations (see Appendix E). A central feature of field notes is that they are written while the researcher is in the field collecting data (Emerson, Fretz, & Shaw, 2001). Furthermore, they included accounts of the researcher's personal experiences and reactions to the interactions of interest to the study (Emerson et al., 2001). The written accounts of my observations enabled me to recall the interactions between the teachers during the PAR-based workshops and the observations I had made about the different ways that the teachers implemented inclusive education policy in the classroom with learners who are visually impaired. I also included my initial impressions of the schools upon walking in, my thoughts on the interactions between the teachers and learners during the classroom observations and the interactions among teachers during the PAR-based workshops. Photographs 3.5, 3.6 and 3.7 below show the schools that I visited during data-collection activities.

Photograph 3.5   **The exterior of one of the schools I visited**

Photograph 3.6   **The interior of one of the classrooms**

Photograph 3.7   The play area of one of the schools

An advantage of field notes was that they enabled me to capture specific details regarding incidents and interactions that occurred while I was collecting my data. The field notes provided for rich descriptions of implementation strategies, especially regarding the teachers' needs for implementing inclusive education policy. This contributed to enhancing my already rich data and aided in the analysis of my data (Creswell, 2013; Lofland, Snow, Anderson, & Lofland, 2005; Mulhall, 2003; Patton, 2002).

A disadvantage of using field notes as a data-collection technique is that the events that occurred in the natural setting cannot be replicated, which may lead to valuable information and details being lost (Tessier, 2012). There may have been instances during the participant observations where I as researcher might have missed opportunities when I observed interactions and conversations between teachers during the PAR-based workshops. This could moreover have the implication of data being underrepresented (Hamo, 2004). However, using of audio-visual recording techniques, I was able to refer to photographs that had been taken and audio recordings that had been made during the site visits to fill any gaps that I found in my field notes.

3.4.3.4 Researcher diary

During the course of the data-collection and -documentation process I used a researcher diary to note down my own personal thoughts, experiences and emotions attached to being in the field. Reflexivity involves being in a constant state of self-

reflection about what could be influencing a researcher's responses while at the same time being aware of the influence of the topic and the relationship with the participants (Dowling, 2006; Hughes, 2014; Ortlipp, 2008). Imperative to reflexivity is acknowledging the personal changes that occur in the researcher (Palaganas, Sanchez, Molintas, & Caricativo, 2017). Moreover, it demonstrates the changes in actions and behaviours of the researcher and participants throughout the research process (Jasper, 2005; Palaganas et al., 2017).

Engaging in a process of reflexive writing demonstrates a certain level of self-awareness and a sense of responsibility for and taking ownership of the thoughts, feelings and emotions experienced in the research process (Hughes, 2014; Jasper, 2005). During the course of the research I made notes of the impressions I gained from the observations I had made to alert me to any bias that might have presented itself in the analysis and interpretation of the data. Impressions formed might in part have had their origins in my previous profession as a teacher or in entering into social settings with which I was unfamiliar. As a teacher I previously worked in a mainstream school but I had never been exposed to a special school for learners who were visually impaired.

After each visit to a school I would immediately make a note of my reactions when entering the school, from the physical structure, cleanliness, the organisation of the staff, and the reaction of the staff to my presence in the school and their classrooms as well as their interactions during the PAR-based workshops (see Appendix F). This helped me to be aware of my subjective positioning and to monitor the impact of my interpretations (Berger, 2015; Darawsheh & Stanley, 2014).

3.5   DATA ANALYSIS AND INTERPRETATION

Data analysis is a key part of the research process as this informs the research outcomes through seeking concepts, themes and patterns in the data that had been generated (Flick, 2013; Srivastava & Hopwood, 2009). The objective of the process of analysis is to have a thorough understanding of the accounts that participants gave of their experiences in their natural settings (Green et al., 2007). Researchers employ several methods to get insight and make sense of the data that they have gathered (Liamputtong, 2009). The method that is chosen for data analysis is not

only used to uncover the meaning behind the stories participants tell but also to analyse the ways in which they shape their experiences (Gibbs, 2007).

In the context of this study, inductive thematic analysis was used to organise the data in a meaningful way (see Appendix G). In inductive thematic analysis, themes that emerge may be driven by the researcher based on the research questions, the theoretical orientations and the epistemological positioning of the researcher (Srivastava & Hopwood, 2009).

The inductive thematic analysis method assisted me with detailing the implementation strategies that teachers used in the implementation of inclusive education policy with learners who were visually impaired. It further enabled me to report on teacher experiences in the classroom and make a comparison of the differences between and similarities in the experiences of teachers in full-service schools and special needs schools.

The first phase was to familiarise myself with the data. This involved immersing myself in the data and engaging in active reading and making a note of my general, initial impressions (Braun & Clarke, 2006; Maguire & Delahunt, 2017). I did this through engaging with my multiple sources of data collection, such as the PAR-based workshop posters, my field notes and researcher diary. This involved my reading the data repeatedly until patterns and meanings began to emerge.

The second step was to generate initial codes, which involved systematically organising the data (Maguire & Delahunt, 2017) by generating codes that focused on specific aspects of the data that pertained to my research questions (Braun & Clarke, 2006). I then searched for themes by grouping the codes I had identified and looked for potential themes (Braun & Clarke, 2006).

The themes that emerged were then reviewed to ascertain whether they were an accurate representation of the data set (Nowell, Norris, White, & Moules, 2017), after which I defined my themes and ensured that I was able to show how each theme related to the teaching strategies with learners who were visually impaired (Braun & Clarke, 2012). This process culminated in the write-up of the data analysis that was done, which involved presenting a logical and comprehensive interpretation of the

different and similar teaching strategies that were used in full-service and special schools (Braun & Clarke, 2006).

Conducting a thematic analysis was that this method enabled an exploration of the different perspectives that were presented by the research participants (Braun & Clarke, 2006). In this study, thematic analysis was an appropriate method to use as my focus was on implementation strategies used in the classroom, in the different contexts of teachers in full-service schools and special schools. The thematic analysis enabled me to gain insight into the differences or similarities that emerged from the data and also to generate strategies that I might not have anticipated.

A potential drawback in using thematic analysis is that there is potential for the researcher's personal inferences having a bearing on the interpretation of the data that were generated (Javadi & Zarea, 2016). Having my own personal conclusions affect my findings could result in the thematic analysis losing its validity and value (Braun & Clarke, 2006). In an effort to overcome this challenge I engaged in reflexivity by capturing my thoughts about the findings in my researcher diary to ensure compatibility between my interpretations and what the data reflected.

3.6   ETHICAL CONSIDERATIONS

Lichtman (2010, p. 54) provided a broad definition of behaviour that constituted ethics by stating that "ethical behaviour represents a set of moral principles, rules, or standards governing a person or a profession." Before commencing with collecting my data I had to gain ethical clearance from the University of Pretoria to make sure that I begin the research process in good standing (see Appendix A). I did this by applying for the required ethical clearance, and only proceed with data collection once it had been granted by the university.

3.6.1   VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW

The informed consent of the participants is an important part of the research process as it aims to maintain the ethical principle of protecting participants' right to autonomy and their right to refuse to participate in the study without any consequences (Fouka & Mantzorou, 2011; Orb, Eisenhauer, & Wynaden, 2000). Informed consent can be

described as involving the dispensation of information to participants about the study, who the researchers are, an outline of the entire research process and the identification of potential benefits and risks involved in the study (Lewis, 2003; Mackenzie, McDowell, & Pittaway, 2007). After informing participants about the study, it is important for the researcher to allow them the time to consider if they wanted to participate and the opportunity to ask questions about the research.

In the context of my study, and as a co-facilitator, teachers at the different schools were informed about the larger research project (see Appendix B), which included information about the background to the study, the purpose of the study, the activities that would take place during site visits to the schools, expected levels of participant involvement and the benefits of participation. Participants were furthermore informed that their participation was voluntary and that they could withdraw at any time, without any consequences, during the research process. In addition, teachers were given the opportunity to ask questions and to raise any concerns they might have had about the study. All the questions the teachers had were answered to their satisfaction.

3.6.2   PRIVACY, CONFIDENTIALITY AND ANONYMITY

It is the responsibility of a researcher, when explaining consent, to make sure that they established whether participants wanted their identities to be made known in the publication of the findings (Guerriero & Dallari, 2008). A researcher must guarantee anonymity, in compliance with the ethical standard of confidentiality, by ensuring that all information provided by participants is kept safely (Banegas & Villacañas de Castro, 2015; Fouka & Mantzorou, 2011; Lewis, 2003).

Research is largely dependent on trust, which is mostly attributed to the principle of confidentiality (Crow, Wiles, Heath, & Charles, 2006; Pollock, 2012). During the course of the data-collection process, all the data that were collected were kept in a safe place to maintain the principle of confidentiality. A trusting relationship had been established between the participants and I by following the principles of strictly professional conduct throughout the research process, thus making the participants feel comfortable to express themselves freely, and trust that I would handle the information in a confidential manner (Gibson, Benson, & Brand, 2013). An additional

part of preserving the confidentiality of the data generated was that only my supervisors and I were aware of the source of the information that was provided (Whiting & Vickers, 2010). The only persons who had access to the data were my supervisors and I.

3.6.3 PROTECTION OF WELFARE

During the course of the research process caution should be taken at every stage to ensure that all the participants and the participating community are at minimal risk (Avasthi, Ghosh, Sarker, & Grover, 2013). It is important for a researcher to be cognisant of potential risks and consequences. Researchers should above all aim to cause participants no harm during the research process (Adu-Gyamfi & Okech, 2010; Fouka & Mantzorou, 2011; Meddings & Haith-Cooper, 2008). Harm in research may be physical, emotional or psychological (Sim, 2010).

The principle of doing participants no harm begins with the design of the research. Researchers should ensure the protection of the welfare of participants as inadequately designed research increases the probability of harm being done to participants (Scott, 2013). No potential harm or risks were identified in this study. If harm were done to any of the participants, it would have been handled in a professional manner. During the data-collection process, the presence of my supervisor and other senior members of the research team helped me as I could direct potential risks to them had they arisen.

3.7 CONCLUSION

In this chapter I presented an in-depth look at the research methodology that underpinned the study. A detailed description was given of the selected paradigm, the research design of the study, which was followed by the data-collection and data-documentation methods. I then turned the focus to the data-analysis procedure which was used and concluded by giving the ethical standards that were adhered to during the course of the study. In the chapter that follows I present the results of the study.

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Chapter 4
Results of the Study

4.1   INTRODUCTION

In Chapter 4, I present the results of my study. The results are presented through themes and sub-themes that emerged. The themes emerged after an inductive thematic analysis of the data that were collected had been done. The themes emerged from the PAR-based workshops, the audio-visual material, participant observations, field notes and the researcher's diary. Various excerpts from the different methods that had been used to collect data were presented to support the themes and sub-themes that emerged from the data.

4.2   RESULTS OF THE STUDY

This section provides a detailed explanation of the specific themes and sub-themes that emerged from the data. Two main themes and five sub-themes were identified. Figure 4.1 illustrates the two main themes that emerged from the inductive thematic analysis.
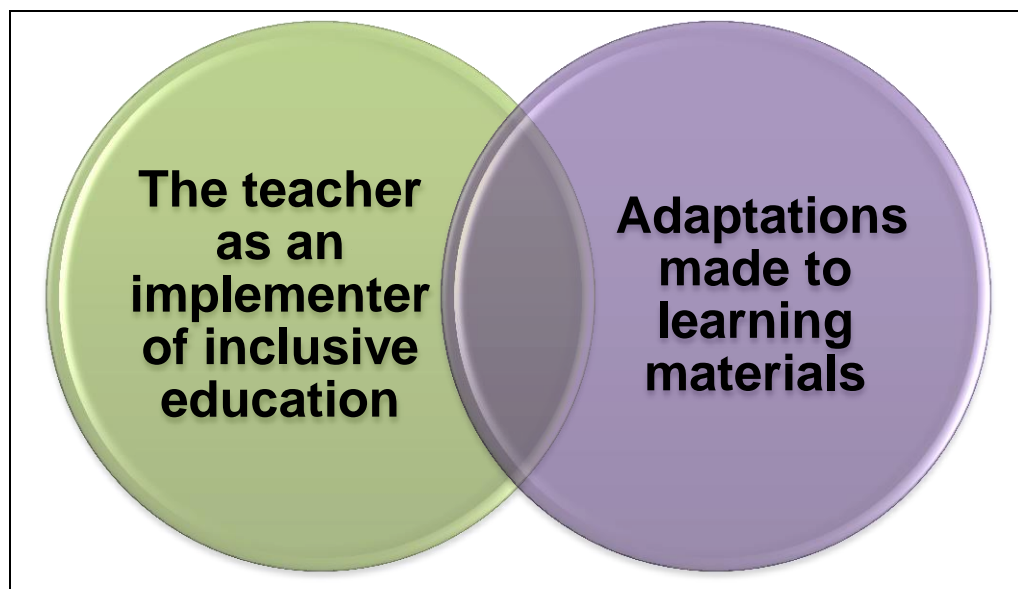
Figure 4.1:   Overview of the two main themes that emerged from the data

Table 4.1 below illustrates the abbreviations that were used when quoting from the different sources of the data that had been collected as well as the specific participants to whom the quotes were attributed. The PRA-based workshops are numbered from one to five to represent the total number of workshops that were conducted at the different schools. For the purpose of the current study, the participants will be referred to according to their PRA-based workshop and the participant number. For example, participant 2 (P2) from PRA-based workshop 5 (PRA 5) will be referred to as PRA 5, P2. The participant number will change according to the PRA-based workshop session from which the data was obtained.

Table 4.1:   The key to the different methods of data collection, the participating schools, and participants

Name of School	Abbreviation
School A	SA
School B	SB
School C	SC
School D	SD
PAR-based workshops	
PAR workshop 1	PAR 1
PAR workshop 2	PAR 2
PAR workshop 3	PAR 3
PAR workshop 4	PAR 4
PAR workshop 5	PAR 5
Participant observation	
Participant observation session 1	PO 1
Participant observation session 2	PO 2
Participant observation session 3	PO 3
Researcher diary	
Researcher diary	RD
Participants	
PAR workshop 1, Participant 1	PAR 1.P1

PAR workshop 2, Participant 2	PAR 2.P2
PAR workshop 3, Participant 3	PAR 3.P3
PAR workshop 4, Participant 4	PAR 4.P4
PAR workshop 5, Participant 5	PAR 5.P5

4.3 THEME 1: THE TEACHER AS AN IMPLEMENTER OF INCLUSIVE EDUCATION

This theme looked at the teacher as a figure in the implementation of inclusive education in the classroom with learners who are visually impaired. This theme denotes the values which the teacher exemplifies, that align with the provision of inclusive education policy about how learners in the classroom should be treated. The teacher as an implementer refers to positive attributes as opposed to simply attitudes of the teacher.

The sub-themes highlighted the teacher acting as a support system for the learners and also looked at the values which the teachers applied in the classroom in implementing inclusive education. Theme 1 examined the ways in which the teachers complied with inclusive education policy. Tables 4.2 below show Theme 1, along with its sub-themes, and the inclusion and exclusion criteria.

Table 4.2: **Table shows Theme 1 and the identified sub-themes, along with the inclusion and exclusion criteria, which were used to identify the subthemes**

Theme 1: The teacher as an implementer of inclusive education		
Sub-themes	**Inclusion criteria**	**Exclusion criteria**
Sub-theme 1.1: **Teachers as a support system for the learner**	The teacher providing support in the form of emotional, social and physical support	Emotional, social and physical support given by a non-teacher figure (anyone other than a teacher)
Sub-theme 1.2: **Teachers' personal values required to implement inclusive education**	Personal values and skills that are used to teach learners that align with inclusive education policy	Personal values and skills that do not align with inclusive education policy

4.3.1 SUB-THEME 1.1: TEACHERS AS A SUPPORT SYSTEM FOR THE LEARNER

During the different PAR sessions in the data collection period three participants reported that acting as a support system for a learner who was visually impaired was imperative in the implementation of inclusive education. A participant from School C provided detail in this regard when saying:

> *We give them any support. And sometimes far more than what is expected from us. Sometimes the parents don't even know it. We don't tell them because they don't need to know* (PO 3, SC, P5).

The same participant added that the support was not limited to one facet but that it was rather about looking holistically at the learner and providing them with what they needed:

> *They are really our children; you will see how much mommy didn't have the money to buy, then you make a plan. Anything that the child needs, it doesn't matter what, emotionally, physically, whatever* (PO 3, SC, P5).

Acting as a support system for the learners was something that a participant from another special school seemed to agree with:

> *Whenever the learner is having challenges in class, you are there as the support* (PAR 2.P2, SD).

Moreover, the specific needs of learners in terms of support were mentioned, as follows:

> *Learners need love, support and inclusivity in class* (PAR 1.P4, SB).

This was a sentiment which was highlighted by one participant from a full-service school about including learners who were visually impaired in the classroom. Photograph 4.1 below of a poster gives an indication of the outcome of the teacher acting as a support system for learners. The participants captured these notes during the second day of PAR-based workshops at School C.
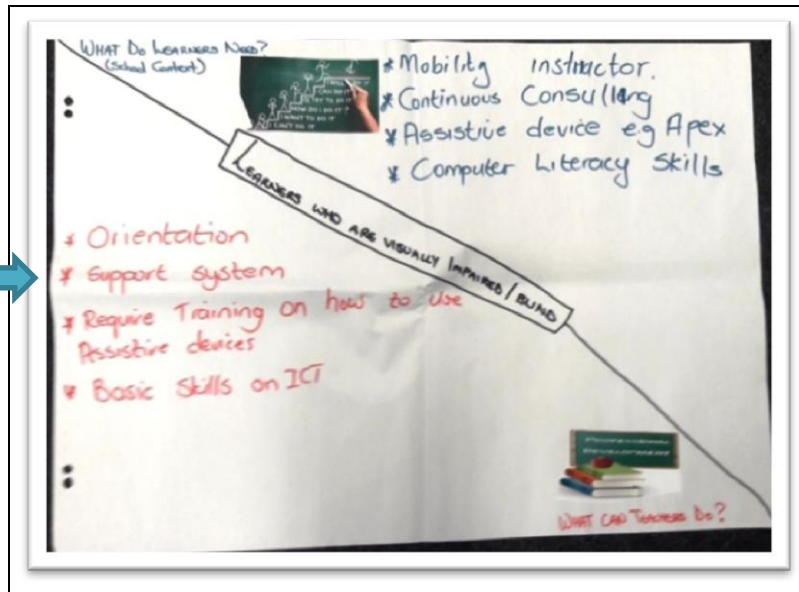
Photograph 4.1: Identification of serving as a support system for learners who are visually impaired

Four participants were in agreement that the feelings of learners who were visually impaired mattered greatly and that it formed part of their responsibility as teachers to act as and provide emotional support to learners. For example, one participant from a full-service school stated that as a teacher one must:

> *… support the learners so that they can feel valued or dignified* (PAR 1.P1, SB).

Another participant at a different full-service school from the one previously mentioned above expressed that self-esteem was important by stating:

> *… build their self-esteem* (PAR 5.P3, SA).

A different participant stated that being an overall emotional pillar of support was of paramount importance.

> *… emotional support* (PAR 5.P3, SA).

Closely linked to this the aforementioned was the notion about acceptance of the disabilities that learners have. One participant from School D, a special school, noted that some learners struggled with acceptance and said that:

We teach kids how to accept the situation based on when they get blind (PAR 2.P4, SD).

4.3.2   SUB-THEME 1.2: TEACHERS' PERSONAL VALUES REQUIRED TO IMPLEMENT INCLUSIVE EDUCATION

This sub-theme denotes the personal attributes which teachers demonstrate when in class with learners. Seven participants were consistent in stating that it was important to demonstrate certain values when teaching learners who were visually impaired. Furthermore, two participants extended this to include the value of not discriminating against learners who were visually impaired:

Teachers should not discriminate [against] *these learners and teach other learners to respect them* (PAR 5.P2, SA).

Another participant added:

… learners to be treated equally (PAR 5.P2, SB).

These aforementioned participants both come from different full-service schools. Two participants expressed that a compassionate stance towards learners was an important value to have as a teacher:

Have compassion for learner[s] *with visual impairment* (PAR 1.P2, SC).

An additional participant stated the following*:*

… to respect and understand learners with disabilities (PAR 3.P1, SD).

There were other values which participants viewed as being important in the implementation of inclusive education. Two participants asserted that patience was an important attribute to have with learners who were visually impaired:

It actually requires a special skill and I would say patience. Lots of patience (PO 1, SC, P3).

A further participant from a full-service school added:

Patience (PAR 1.P5, SA).

I noted the following in my research diary to support what was observed in the classroom:

> *Many of the teachers somewhat normalise the learning environment for the learners and do not create an environment of helplessness but one of giving the learners an opportunity to grow and be themselves. I would imagine also that it takes a lot of patience to get the learners to fully understand what is being taught.* (RD, SC)

Furthermore, the participant observation that was recorded in the classroom at a special school allowed me to capture the ways in which the teachers in class demonstrated these values. Through my field notes I was able to show that the teachers created an atmosphere, where there was a mix of learners with low vision and learners who were blind, in which they were able to interact easily with their teacher. Photograph 4.2 captures my observation of the atmosphere in the classroom.
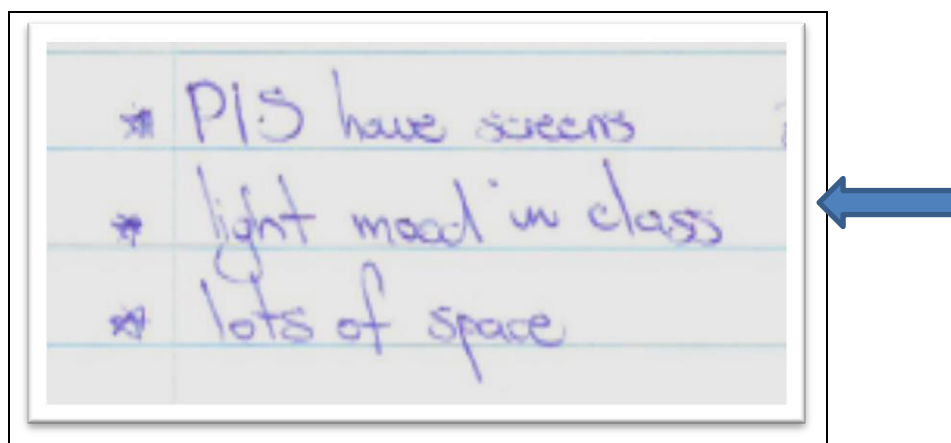
Photograph 4.2: **Field notes identifying the mood of the classroom reflected in the way the teacher conducted the lesson**

4.3.2.1 Discussion of results of Theme 1

Current literature on the role of the teacher in implementing inclusive education posits that teachers are expected to take responsibility for ensuring that it is done (Asamoah, Ofori-Dua, Cudjoe, Abdullah, & Nyarko, 2018; Donohue & Bornman, 2015). This positions the teacher as being the core giver of support to learners who

are visually impaired. The inclusive education policy in South Africa, White Paper 6, indicates that providing support to learners is imperative for promoting its principles (Nel et al., 2011).

Moreover, in an inclusive setting teachers need to acknowledge that being at the forefront includes accepting responsibility for both the personal and social education of learners (Sukhraj-ely, 2012). In their study, George and Duquette (2006) found that teachers who promoted advocacy and positive values helped to create an atmosphere of respect and understanding in the classroom. This could be linked to the results of my study, which show that teachers expressed providing an environment of respect and one that is non-discriminatory was of the utmost importance in implementation.

4.4 THEME 2: ADAPTATIONS MADE TO LEARNING MATERIALS

The second theme, which relates to adaptations made to learning materials, refers to any amendments that changed the way in which learning materials were presented to learners in the classroom. In addition it relates to any changes made to the teaching strategies that were used by teachers to ensure that all learners who had some form of visual impairment were accommodated in the classroom. This theme consists of three sub-themes relating to the instructional adaptations that were made, assessment adaptations and the resources required to make these specific adaptations. Table 4.3 below gives an overview of Theme 2 and its accompanying sub-themes as well as the inclusion and exclusion criteria.

Table 4.3: **Table shows Theme 2 and the identified sub-themes, along with the inclusion and exclusion criteria used to identify the sub-themes**

Theme 2: Adaptations made to learning materials		
Sub-themes	**Inclusion criteria**	**Exclusion criteria**
Sub-theme 2.1: **Instructional adaptations**	Modifications, changes and/or accommodations to classroom activities and classwork to enable teaching	Modifications, changes and/or accommodations made to classroom activities and classwork that obstruct teaching
Sub-theme 2.2:	Modifications, changes and/or	Modifications, changes and/or

Assessment adaptations	accommodations made to tests and examinations, whether internal or external, to enhance learning	accommodations made to tests or examinations that obstruct learning
Sub-theme 2.3: **Resources required for adaptations to be made**	Objects, technology or machinery required to enhance learning	Objects, technology or machinery that does not enhance learning

4.4.1 SUB-THEME 2.1: INSTRUCTIONAL ADAPTATIONS

Instructional adaptations are what teachers do to present various methods of learning material that are appropriate for a learner who has low vision or a learner who is blind. This requires the teacher to implement teaching strategies through modifying learning materials. Participants indicated that different learners had varying degrees of visual impairment, therefore it was important to use different methods of adapting their learning materials so that they were appropriate for the learner. During my observations at the PAR-based workshops I noted some of the discussions that the participants were having in relation to making instructional adaptations. These are indicated in the photograph below. Photograph 4.3 shows some of the notes taken during the second day of the PAR-based workshop at school D.
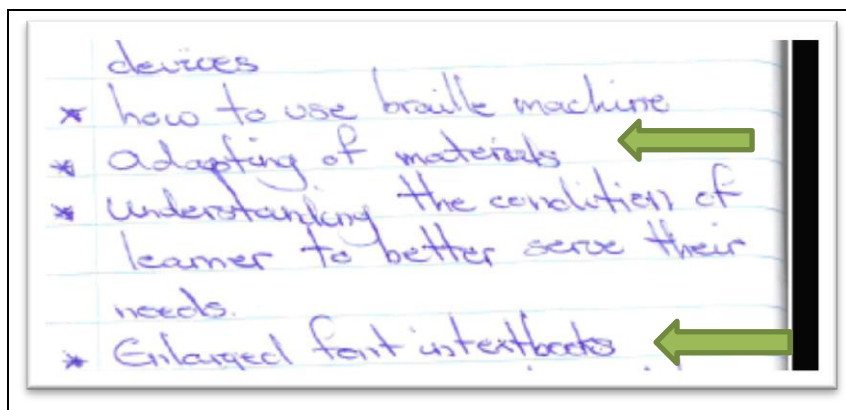
Photograph 4.3:   Field notes identifying adapting of learning materials

4.4.1.1 Brailling

In making adaptations for learners based on the vision of the learner, three participants explicated that one of the adaptations they had to make was to adapt learning materials into braille. One participant from a special school stated:

> *I need to print books, edit it, print it,* [and] *then give it to them in braille* (PO 1, SD, P4).

A participant from a special school also spoke about the need to adapt text into braille:

> *Based on the braille books and braille machines, teachers learn to adapt and make notes for the learners* (PAR 2.P4, SD).

It was also significant to highlight the importance of the way in which learning materials were adapted into braille. This was emphasised by a teacher from a special school, as follows:

> *There are certain things that you need to know to minimise so that you cannot … give a lot of info because they normally then get mixed up with too much info. So, in other words, you need to minimise it and you need to be able to know what is relevant to a specific problem so that you can limit.* (PO 1, SC, P3)

From the above-mentioned insert it is clear that the adaptation into braille is an important aspect of implementing inclusive education. However, it is noteworthy that the participants from School A and School B, both full-service schools, did not mention the adaptation of learning materials into braille. School A mentioned knowledge of braille and resources as being important for teachers to have, whereas School B did not even mention braille as a means by which to implement inclusive education with learners who were visually impaired. During the PAR-based workshop at School A, many of the teachers asked for clarity on the questions and expressed a lack of exposure to learners who were visually impaired. The photograph of my field notes below indicates the observations that were made by the participants at School A during the PAR-based workshop. It indicates that the participants were uncertain of how to answer the questions.
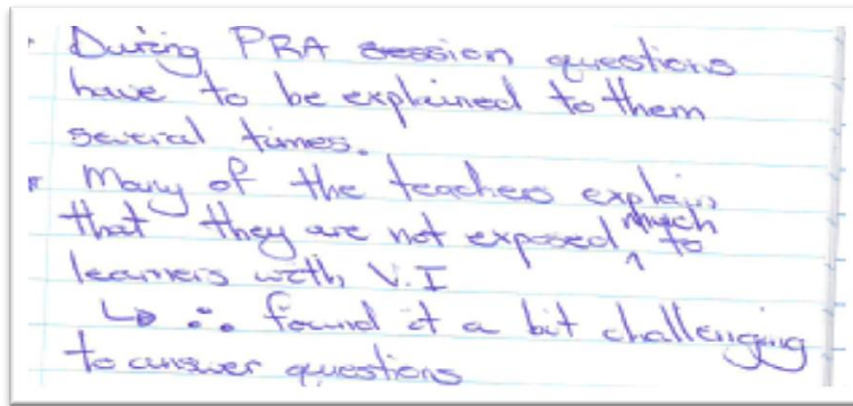
Photograph 4.4: **Field notes that identify challenges that participants faced during a PAR session**

4.4.1.2 Enlarged font

Another form of adaptation that teachers made was to enlarge the font of notes and textbooks for learners with low vision. A participant from School A, a full-service school, spoke of the need to provide the enlarged font for their learners with low vision:

> *Teachers should use large fonts when writing on the board* (PAR 5.P2, SA).

Two participants stated that when giving learners textbooks these also needed to be adapted into a larger font for those who had low vision:

> *Teachers provide large print for those kids with low vision* (PAR 3.P5, SD).

A participant from School A stated that teachers should:

> *Prescribe books with bigger font to accommodate learners with decreased ability to see* (PAR 1.P4, SA).

The two participants were from a special school and a full-service school respectively. Linked to this body of information was the view of a teacher in a special school, that when enlarging the font one should also consider simplifying specific aspects of the content:

> *Then when you pick it, you must make sure there is not too much detail…This didn't come out very nice because they can't really see that.*

Also, if you want to pick a reader, see that the pictures are not too many-detailed. (PO 1, SC, P4)

4.4.1.3 Tactile materials

Three participants in addition made mention of the importance of using materials that were of a tactile nature when in the classroom. During the PAR-based workshop on the first day a participant from School B, which is a full-service school, mentioned:

Concrete objects (PAR 4.P3, SB).

Similarly, another participant from a special school emphasised that:

They must feel it. So it must be tactile for them (PAR 1.P3, SC).

One participant from a special school spoke of having tactile resources in the classroom as a means to help in implementing inclusive education, and another participant added:

Tactile material (PAR 3.P1, SD).

4.4.2 SUBTHEME 2.2: ASSESSMENT ADAPTATIONS

Assessment adaptations are concerned with the changes that are made to any tests or examinations, in the form of converting questions into braille for blind learners or by enlarging the font for learners with low vision, which is done to accommodate learners who are visually impaired. These measures ensure that the learners are tested and/or examined under fair conditions. Eight of the participants, from School A which is a full-service school and School C and School D, which are special schools, explained that adaptations had to be made for the assessment of learners who were visually impaired. One common consistency was to allow for learners to have extra time during assessments. One participant from School A, a full-service school, stated:

Give the learner extra time (PAR 5.P1, SA).

An additional participant from a special school agreed with the aforementioned point, putting on record that they also gave their learners more time to complete assessments:

> *I give them double time all the time* (PO 2, SC, P4).

Another participant from the same special school also added that learners who were visually impaired had to receive additional time:

> *Additional time for assessments* (PAR 1.P2, SC).

A participant from School D, a special school, conveyed applying for concessions for learners:

> *Then concessions, know that – based on that blindness or disability – (that) per hour this is what we get, 15 minutes that the concession the child is given to …* (PAR 3.P4, SD).

Furthermore, a participant from a different special school noted the importance of the content of the assessment staying the same:

> *There are so many different ways in which you can adapt but you must just make sure that you, that the degree of difficulty should still be there* (PO 1, SC, P3).

Participants went on to explain another form of adapting assessments, which was the skill of amanuensis[2]. One participant from a special school said:

> *I know how to do amanuensis* (PAR 3.P2, SD).

Another participant from the same special school as the above-mentioned participant asserted that it was important to know how to do amanuensis, which emphasised the importance of this:

> *And amanuensis, there are kids who cannot read or write braille* [and] *that means you need (it) to be able to write* [it] *for them* (PAR 2.P4, SD).

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[2] Amanuensis refers to questions being read aloud to learners and their answers being written down by a scribe in an examination situation.

A participant from a different special school furthermore reported that using amanuensis was imperative to implementing inclusive education in assessments:

> *Read and scribe amanuensis* (PAR 1.P2, SC).

Although participants from School A did make mention of the need to allow extra time for learners, School B made no mention of the need to make assessment adaptations for learners who were visually impaired.

4.4.3   SUB-THEME 2.3: RESOURCES REQUIRED FOR MAKING ADAPTATIONS

This sub-theme looked at the resources that teachers needed to facilitate the adaptation of learning materials for learners who were blind or who had low vision. Five participants from School C and School D, both special schools, explained the importance of specific resources that were required to teach learners who were visually impaired. The use of assistive devices in the classroom was a common idea that was expressed mainly by participants from special schools. One participant from a special school pointed out the importance of these devices, particularly for specific subjects, by stating:

> *Devices such as Apex, talking calculators. Every time we are writing a test, those learners doing business studies, maths, they need calculators* (PAR 3.P5, SD).

Moreover, it was recorded that certain assistive devices, such as the Job Access with Speech (JAWS) device, a screen reader which helped learners who were visually impaired listen to the content of what was written in the textbook:

> *Software like JAWS, magnifying glasses. Some of them, they find it hard to read the textbooks because the font size* (PAR 2.P4, SD).

This specific result was indicated by a participant from a special school. Another participant from a special school explained that a closed-circuit television system worked in their classroom:

> *You can even put your reader here, your colour(ed) pictures. And you can move this around if you want to show them something on the notice board. This thing can do various things* (PO 2, SC, P4).

The picture shown below, photograph 4.5 shows a talking calculator which helps learners who are blind to perform mathematical equations. The calculator says out loud the key that the learner presses and additionally says the solution to the problem out loud. Photograph 4.6 is a closed circuit television system which allows the teacher to magnify the learning materials to the learners who have low vision.

Photograph 4.5:
A talking calculator
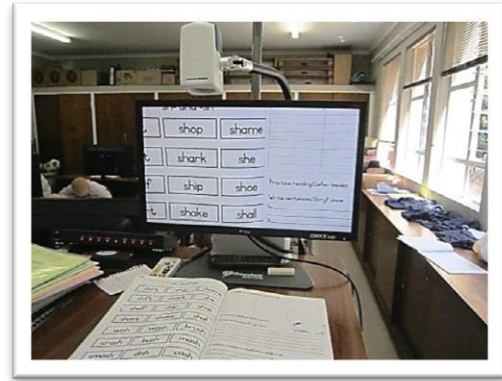
Photograph 4.6:
Closed-circuit television system, which is used to enlarge font of learning materials

In the same way, this argument was supported in my research diary:

> *It is not enough to simply rely on verbal explanations but that to implement inclusive education with learners who are visually impaired there is a vast amount of resources in the form of technology which can better help the teachers in making the learning process easier for the learners.* (RD, SD)

Photograph 4.7 below shows my thoughts that I had captured in my research diary.
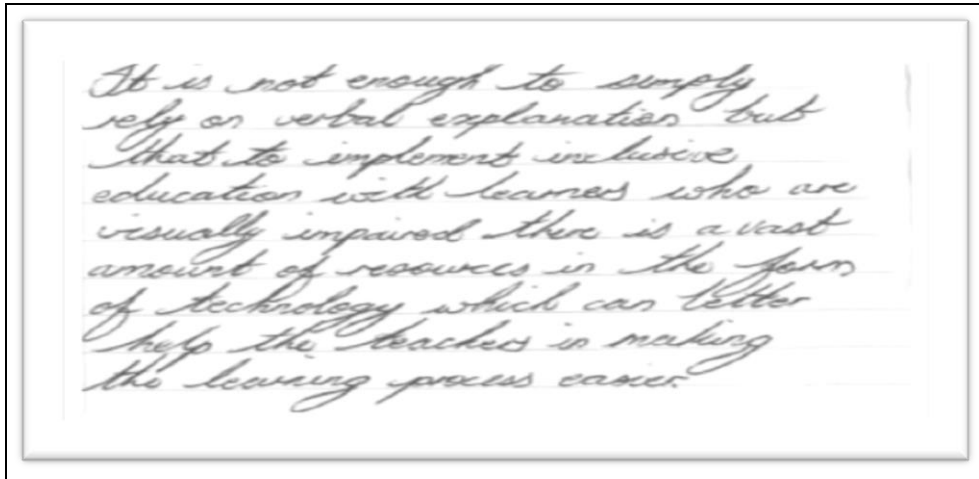
Photograph 4.7: **Excerpt from my research diary about resources**

Other resources that were key to the implementation of inclusive education were identified. Specific resources like embossing machines were seen as highly appropriate to be able to adapt learning material into braille for learners successfully. One participant from a special school reported:

> *Embossing machines, which is very important for the school to have* (PAR 2.P4, SD).

Two participants from special schools similarly stated that having such resources was important:

> *Braillers* (PAR 1.P1, SC) and

> *Braille industrial printers* (PAR 1.P1, SC).

In contrast, participants from School A, a full-service school, were not as conversant with the resources and assistive devices that were necessary to help with inclusive education implementation. This conclusion was substantiated in my research diary, in which I wrote:

> *They may lack knowledge on what would be necessary to include learners who are visually impaired and to make sure that they keep up with the curriculum and with their peers in class* (RD, SA).

Photograph 4.8 below shows what I had written after the PRA-based workshops.
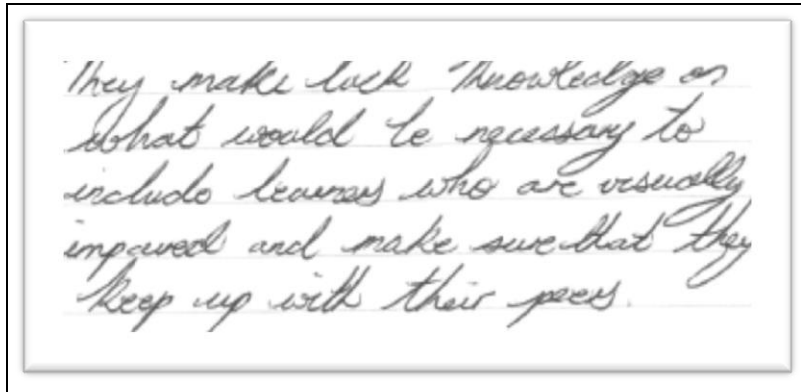
Photograph 4.8:   Excerpt from my research diary about including learners who are visually impaired

4.4.3.1 Discussion of results derived from Theme 2

The results of the study made evident that the adaptation of learning material into braille for learners who were visually impaired confirmed what was stated in literature, namely that braille was the main way in which learners who were blind could learn to read and write (Douglas et al., 2011; Habulezi, Molao, Mphuting, & Kebotlositswe, 2016; Mboshi, 2018). Research has shown that multisensory learning through touch and auditory perception is a means in which to pass knowledge on to learners who are visually impaired (Manna & Dheesha, 2016). In their study, Brown, Packer, and Passmore (2013) reported that the use of assistive technology assisted with increasing accessibility to the curriculum for learners who are visually impaired.

4.5   CONCLUSION

In this chapter, I presented the results of my study after the inductive data analysis procedure had been employed. The themes that emerged were derived from the triangulation of the data sources which I had used. I then discussed the results, using already existing literature, to report on what was repeated, what was different and on any silences that were noticed.

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Chapter 5
Conclusion and Recommendations

5.1 INTRODUCTION

In Chapter 5, I provide a brief overview of the preceding chapters. I then provide conclusions based on my research questions, after which I briefly explain the limitations of the study and make recommendations for further study related to the topic of the current study.

5.2 SUMMARY OF CHAPTERS

In **Chapter 1**, I gave an outline of the research about my topic by providing an introduction to my study, followed by the research problem and rationale. I then stated my primary research question, along with my secondary research questions. I defined the key terms for the study. I followed this up with giving a summary of the research methodology that I used in the study, which included the data-analysis process, the quality criteria used and the ethical considerations of the study.

In **Chapter 2**, I explored the literature that pertained to the topic of the current study. I gave detailed insight into the literature that displayed the statistics about visual impairment, both globally and in the South African context. I followed this up with providing an in-depth background of inclusive education in South Africa, which included the important policies that drive it and looked exclusively at literature on inclusive education in South Africa. I subsequently described the implementation strategies that were used in inclusive education with learners who were visually impaired by considering what was done in this regard in developed countries and in South Africa.

In **Chapter 3**, the research methodology guiding my study was explained fully. I detailed the theoretical paradigms that formed the basis of my study, including the meta-theoretical and methodological paradigms, comprehensively. I then focused on the research design that I employed in my study. Afterwards I gave a description of the data-collection and data-documentation techniques that were utilised, which

included PAR-based workshops, participant observation, field notes, a research diary as well as audio-visual records for documentation purposes. Lastly, I gave an explicit explanation of the ethical procedures that were undertaken.

In **Chapter 4**, I presented the themes and sub-themes that emerged from my inductive data-analysis process. I continued to compare the findings of the study to existing literature

5.3   RESEARCH CONCLUSIONS

In the following section I present the conclusions derived from the findings of my study. I first looked at the secondary research questions and followed this up with my primary research question. Figure 5.1 shows how the themes identified in Chapter 4 relate to the secondary questions and the primary research question.

What are the differences and similarities in the implementation of inclusive education policy for learners who are visually impaired by teachers from full-service and special schools?

- **Differences:** Braille, resources (JAWS, braille printers, embossing machines)
- **Similarities:** Enlarged font, tactile materials, added time during assessments, amanuensis for assessments

How do teachers in full-service and special schools implement inclusive education policy for learners who are visually impaired?

What are the full-service and special school teachers' common needs to implement inclusive education policy for learners who are visually impaired?

- Resources for adaptations

Figure 5.1:   Relationship between secondary research questions and the primary question

5.3.1 SECONDARY RESEARCH QUESTION 1

❖ **What are the differences and similarities in the implementation of inclusive education policy for learners who are visually impaired by teachers from full-service and special schools?**

The findings that emerged from the study showed that teachers from both full-service schools and special schools shared similar value sets with regard to learners who were visually impaired. Demonstrating values that were not discriminatory but rather showing values such as patience and compassion to learners assisted with being able to implement inclusive education with learners who were visually impaired. In addition to this, teachers from both special schools and full-service schools highlighted the need to be able to act as a support system for the learner. It was expressed by teachers that in the classroom the teacher was the main source of support for learners who were visually impaired.

The teachers explained this by stating that it was imperative to provide emotional support to learners as that would make them feel valued, included and supported in the classroom. This finding indicated that teachers not only possessed the aforementioned values but in addition aligned them with the principles outlined in White Paper 6 (Department of Education, 2001). Furthermore, it denoted that the teachers in full-service schools and the special schools were on a par as regards knowledge relating to the principles that are outlined in inclusive education policy.

In relation to the finding above, there was one study by Lyons, Thompson and Timmons (2016) that emphasised that teachers wanted learners to feel a sense of belonging in the inclusive classroom. However, this particular study was not in reference to learners with visual impairment, who presented in the classroom with their own unique emotional and social needs. A different study furthermore found similarly that teachers often acted as a direct support and an advocate for learners with visual impairment (Brown & Beamish, 2012). Despite there being some research referring the role of being a support system, it did not exclusively pertain to learners with visual impairment. This indicates a silence in the literature on provision of support specifically to learners with visual impairment.

The teachers furthermore demonstrated that they used similar teaching strategies in implementation. They indicated that instructional adaptations such as providing a large font to learners and using tactile materials were strategies employed for inclusive education implementation. Research has indicated that learners who are blind rely heavily on their senses of touch and sound and thus require learning which is focused on maximizing these two senses (Westwood, 2018; Sahin & Yorek, 2009).

In addition to this, there is a need to ensure that learning materials that contain pictures should not be too detailed as this could make it difficult for a learner with low vision to see the image clearly. Teachers in full-service schools and special schools appeared to have some knowledge of different instructional adaptations that were effective in implementing inclusive education with learners who were visually impaired. Despite some similarity in instructional adaptations, there was a difference between the knowledge base on implementation strategies of teachers in full-service schools and those in special schools. The use of braille as an instructional adaptation was not mentioned by any of the participants from the two full-service schools where data were collected. This indicates a silence in the literature on implementation strategies of teachers in full-service schools in South Africa.

An additional, similar, strategy of the two types of schools was making adaptations for assessments, although this particular finding was only raised by one full-service school. All the teachers described the need to provide learners with extra time when they were doing assessments. The teachers from the special schools were in agreement with this view. Moreover, the ancillary skill of amanuensis was viewed as a measure to assist learners and serve as a means of implementing inclusive education (Fulcher, 2010). This indicated that teachers from one full-service school and the two special schools involved in the current study had awareness of and knowledge about different adaptations that needed to be in place for the assessment of learners who were visually impaired.

Research has shown that common adaptations that are made for the assessment of learners who are visually impaired include extending the testing time, converting assessment materials into braille for blind learners and preparing test papers with an enlarged for learners with low vision (Südkamp, Pohl, & Weinert, 2015). However, in relation to literature in South Africa there was no detail provided in the literature

regarding specific adaptations to assessments that learners who are visually impaired require.

However, one noticeable difference in respect of the assessment adaptations was that the second full-service school included in the study did not mention that they used any adaptations for assessments in their school. This could be attributed to the teachers in this specific school lacking the necessary knowledge to make assessment adaptations. The aforementioned notion concurs with research done by Themane and Thobejane (2019), which shows that teachers in full-service schools have expressed that they find it challenging to implement inclusive education in their classrooms.

As noted above, there were some noticeable differences and similarities between the implementation strategies used by teachers in full-service schools and special needs schools. The special schools in the study were more conversant in adaptations that were specific to instruction and assessments whereas the full-service schools were not as fluent in speaking about adaptations that could be made to learning materials. The findings indicated that despite full-service schools being mandated to provide full support for learners in the school to promote complete inclusion, the challenge that teachers faced related to having the appropriate knowledge of what was required for learners who were visually impaired (Maguvhe, 2015).

Equally important, teachers in full-service schools lacked awareness of the differences in implementation strategies that would be needed for a learner who was blind and for a learner with low vision. Despite the expectation that teachers should engage in appropriate professional development in full-service schools, teachers reported not receiving adequate training or development (Mncube & Lebopa, 2019). This in turn would have an impact on their ability to implement inclusive education in the classroom successfully, and even more so with learners who were visually impaired.

5.3.2 SECONDARY RESEARCH QUESTION 2

❖ **What are the full-service and special school teachers' common needs in implementing inclusive education policy for learners who are visually impaired?**

The teachers in special schools spoke extensively about the resources that they needed for assisting with the adaptation of learning materials. It was noted that the resources that were required for learners who were blind or who had low vision differed. Learners who are blind require assistive technology that taps into their auditory perceptions such as talking calculators and screen readers such as JAWS and the Apex machine (Kapperman, Koster & Burman, 2018). These resources would allow the learner to have an audio version of learning materials to increase their access to the curriculum. The findings of my study and the literature confirmed the various types of assistive technology that were used by teachers, such as screen readers and screen magnifiers, to increase accessibility in different ways to accommodate learners who are either blind or have low vision (Opie, 2018; Taylor, 2016; Douglas & McLinden, 2005).

In addition to the above-mentioned machines, teachers from special schools stated that in order to make conversions in braille there were specific printers that had been designed for that purpose and were therefore a necessity in schools. Braille printers are utilised to allow teachers to be able to print learning materials in braille for learners who are blind (Bhalalusesa, 2016). Another essential resource that was highlighted was embossing machines which print out learning materials that are tactile in nature so that learners who are blind can learn through using their tactile senses (Fusco & Morash, 2015). The availability of these resources in schools help teachers with being able to provide adequate learning materials which would enhance the learning experience of learners who are blind. Research has indicated that the above mentioned resources are the primary means by which teachers are able to provide educational materials to learners who are blind (Chowdhury et al., 2018).

However, the teachers from the full-service schools made no mention of the use of resources to assist with their implementation strategies. The limited knowledge of

appropriate instructional adaptations for learners who are blind, could have been an indication that they generally lacked knowledge of any adaptations related to braille. Furthermore, it could relate to the teachers not having exposure to learners who are visually impaired (Sahin & Yorek, 2009). Thus, they are not aware of the need for specialised braille printers to convert learning materials into braille. This finding confirms existing literature of teachers in full-service schools not having adequate knowledge and being sufficiently trained to cater to the needs of learners (Makhalemele & van Staden, 2018). Despite similar findings in literature, there was no literature specific to the South African context that spoke about teachers in full-service schools and implementation with learners who were visually impaired.

5.3.3   PRIMARY RESEARCH QUESTION

❖ **How do teachers in full-service and special schools implement inclusive education policy for learners who are visually impaired?**

The findings of the study showed that teachers were the central figures and they thus needed to be able to extend their roles to provide for the unique needs of learners who were visually impaired (Donohue & Bornman, 2015). Supported by the secondary research questions, the themes that emerged from Chapter 4 highlighted the implementation strategies that teachers used in the classroom. Figure 5.2 below is a visual representation of the key themes that were identified in Chapter 4 and indicates how these themes answered the primary research question. Each of the themes are discussed in further detail in the section that follows after the table.
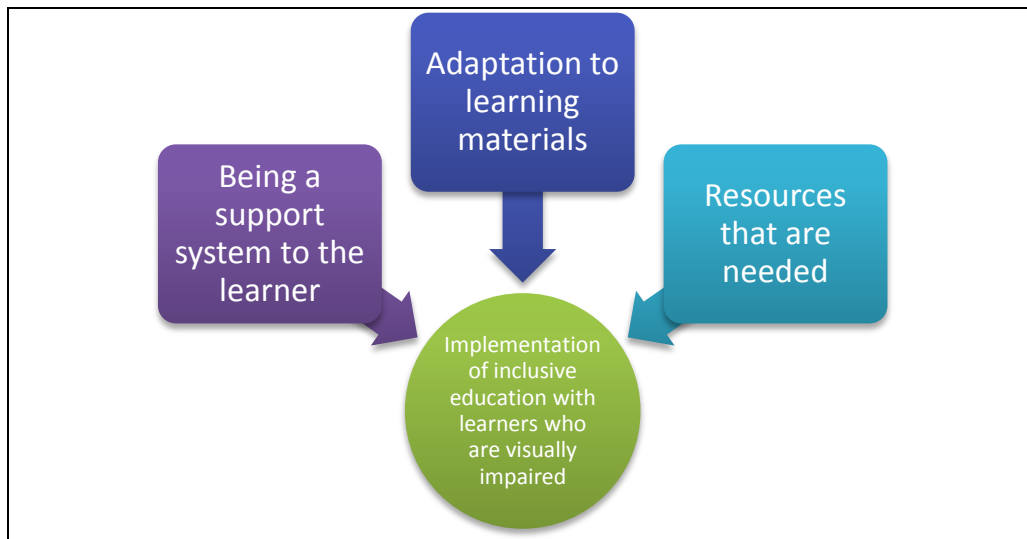
Figure 5.2:   A visual summary of the implementation strategies that teachers use

In the first place, teachers reported that being a support system for the learner was imperative as an implementation strategy for learners with visual impairment. The data gathered in the study showed that teachers were often the pillars of emotional support that learners needed to help them to feel included in the classroom. The support that teachers gave was not limited to emotional support but also included the financial support of the teachers. This submission was shared by teachers from both the full-service and special schools. In this study teachers reported that focusing on the overall domains of the learner in the classroom within the context of the school facilitated inclusivity. Research has found that learners who are visually impaired often experience emotional and psychosocial difficulties in the school context (Mpofu, 2018). Thus, the emotional and social needs of learners who are visually impaired must be included and met in the classroom (Department of Basic Education, 2014c; Sacks, Lueck, Corn, & Erin, 2011). Moreover, the role of the teacher is to be the provider in meeting the emotional and social needs of the learner (Nandini & Taj, 2014).

Furthermore, teachers explained that showing their learners various values in the classroom, such as the patience and compassion they have for their learners, further enhanced learning as they created a classroom atmosphere in which understanding and being responsive prevailed beyond the physical barrier of visual impairment. Research has found that learners who are visually impaired often experience

emotional and psychosocial difficulties in the school context (Mpofu, 2018). Thus, the emotional and social needs of learners who are visually impaired must be included and met in the classroom (Department of Basic Education, 2014c; Sacks, Lueck, Corn, & Erin, 2011). Moreover, the role of the teacher is to be the provider in meeting the emotional and social needs of the learner (Nandini & Taj, 2014).

My study however, found that teachers from both full-service schools and special schools reported that being a direct support for learners, particularly in the provision of emotional support, was vital in implementation. This specific result was not evident in the literature. The literature instead focused more on institutional support, support in the form of specialist teachers, therapists, psychologists and other stakeholders (Hay, 2012; Nel et al., 2016; Tiwari, Das, & Sharma, 2015). Furthermore, the research concentrated heavily on the link between how the attitudes of teachers and their skills and knowledge might have an influence on the outcomes of inclusive education (Domović, Vidović Vlasta, & Bouillet, 2017; Florian & Linklater, 2010; Malinen et al., 2013; Vaz et al., 2015).

In the second place, according to the data, teachers explained the need to be able to make appropriate changes to the learning materials that were presented to learners who were visually impaired. Learners with visual impairment are a heterogeneous population with varying challenges thus there is a need for appropriate curriculum implementation and instructional systems that enhanced learning (Kapur, 2018; Otyola, Kibanja, & Mugagga, 2017). Therefore learners required adaptations that would enable them to benefit regardless of whether they were in a special school or a full-service classroom.

Teachers reported that they provided adaptations that were tailored according to whether a learner was blind or had low vision. Teachers in full-service schools and special schools reported that using an enlarged font was the main adaptation for learners with low vision. For learners who are blind the use of braille is essential to allow these learners to have an enhanced learning experience. In contrast to the use of braille, teachers from full-service schools did not at all mention braille as an implementation strategy. The use of tactile materials was also stated as being important in the implementation of inclusive education. Thus using multisensory learning methods, such as tactile materials and concrete objects, is vital in aiding in

the learning process of learners who are visually impaired (Leavitt, Athanasiou, & Sanchez, 2018; Metatla, 2016; Kocyigit & Arter, 2015; Cox & Dykes, 2001). Research has shown that through tactile experiences a learner is able to gain knowledge (Luque, Brandão, Kira, & Brandão, 2018; Shinali, Mnjokava, & Thinguri, 2014). This demonstrated that teachers utilising the tactile perceptions of learners assisted with getting the learners to understand the material that they were learning, therefore using an effective implementation strategy.

Teachers stated that in order to use adaptations certain resources needed to be in place. Teachers reported that the use of assistive technology was especially useful for learners who were blind. Assistive technology assisted blind learners with being able to maximise their auditory perception as they could listen to learning materials that were being read to them out loud (Mulloy, Gevarter, Hopkins, Sutherland & Ramdoss, 2014). Reliance on auditory perception aids is essential for providing understanding and facilitates greater accessibility to learning materials that are provided in the classroom (Luque et al., 2018). Furthermore, a resource such as magnification glasses to help learners with low vision to read was another implementation strategy that teachers employed. However, teachers in full-service schools did not mention the need for resources as an implementation strategy.

The data obtained from the current study showed that teachers in the special schools were using implementation strategies that were consistent with policy and literature concerning the adaptation of learning materials (Agesa, 2014; Mboshi, 2018). Moreover, the strategies that teachers used in assessment indicated the need to provide different conditions and experiences by affording additional time and amanuensis for learners who are visually impaired (Luque et al., 2018; Südkamp et al., 2015). There were nevertheless some differences that had been noted, such as the full-service schools not using braille as an implementation strategy.

Existing literature in South Africa does not make specific mention of implementation strategies related to emotional support and teachers' being a support system for learners with visual impairment. Instead current literature in South Africa focused on teachers' general attitudes and beliefs, competencies and perceptions about inclusive education. Furthermore, these findings related to inclusive education in general and did not focus on a specific barrier to learning. Hence, this study has

brought to the fore the ways in which teachers in South Africa provided support for learners who were visually impaired and the values that underscored the promotion of inclusion in classrooms with learners who were visually impaired.

From the findings of the study it became clear that teachers in full-service schools lacked the appropriate knowledge and skills effectively to provide adequate adaptation in the classroom with learners who were visually impaired. Although they demonstrated some knowledge of adaptation with learners who had low vision, they lacked knowledge of strategies used for blind learners such as braille and assistive technologies. This could have been attributed to the lack of exposure of these teachers regarding learners who were blind, as emerged during the PAR-based workshops. Teachers in special schools demonstrated greater knowledge and skill in respect of implementation strategies with learners who have various degrees of visual impairment. It could be said that a specialised qualification and experience could contribute to having an adequate knowledge and skills base in implementation strategies with learners who are visually impaired (Engelbrecht et al., 2016; Eloff & Kgwete, 2007)

5.4   RELEVANCE OF SOCIOCULTURAL THEORY IN THIS RESEARCH

Lev Vygotsky's sociocultural theory posits that developmental processes are initiated and become active during learning activities in the presence of others in the environment. Learning in a social context stimulates cognitive development while creating the conditions that are required for mental development to take place (Abrie, Blom, & Fraser, 2016). When a learner is exposed to concepts and given guidance to work independently on these concepts in the social learning environment more complex processes occur. In addition to this, sociocultural theory denotes that the use of tools that have cultural and historical significance have an influence on the individuals who use them as they inspire previously unknown activities (Turuk, 2008). Furthermore, the zone of proximal development, through processes such as scaffolding, mediation, reflective practice and shared cognition, assists with giving insight into the developmental processes that are occurring in learners, which gives teachers an indication of the ways in which learning could be guided more effectively (Abrie et al., 2016). Table 5.1 below shows a visual comparison of the themes that emerged from the study alongside the key aspects of sociocultural theory.

Table 5.1: Comparison between the theoretical framework and the themes that emerged from the study

Key aspects of sociocultural theory	Findings that emerged from data reflected in Chapter 4
Social interaction	**Theme 1: Teacher as an implementer of inclusive education** Sub-theme 1.1: Teachers as a support system for the learner Sub-theme 1.2: Teachers' personal values in implementing inclusive education
Cultural, historical and social mediation	**Theme 2:** Adaptations made to learning materials Sub-theme 2.3: Resources required for making adaptations
Zone of proximal development Scaffolding	**Theme 2:** Adaptations made to learning materials Sub-theme 2.1: Instructional adaptations
Language and thought	**No occurrences in data**

This research found that teachers in full-service and special schools maximised on positive social interaction experiences with learners who were visually impaired. This aspect of sociocultural theory connects with the theme of the teacher being an implementer of inclusive education. Teachers explicated that they offered largely emotional support to their learners but also added that financial support was another form of support which they at times lent their learners who were visually impaired. Teachers were in agreement that they should display specific characteristics towards their learners, such as not showing a negative attitude but rather being understanding of the challenges that the learners were experiencing. This supports the teachers' contributions about creating an environment that was inclusive for learners who were visually impaired.

Based on the findings of the study, it emerged that teachers engaged in the process of mediation through using physical tools that intend to ease access to the learning

materials by learners who were visually impaired. This aspect of sociocultural theory relates to the theme of adaptation of learning materials, as became clear when teachers explained the use of different types of assistive devices as well as the varying instructional adaptations such as enlarged font, braille and tactile materials as part of their implementation strategies. The assistive devices are mainly in the form of screen-reading software. Resources such as braille printers and embossing machines assisted with making the instructional adaptations the teachers had identified. The teachers did not speak explicitly about how they actually used their implementation strategies to enable the process of scaffolding in the zone of proximal development but simply mentioned the mediation tools that they used. In sociocultural theory language is viewed as a tool that is used (Turuk, 2008). However, in this study language was not outlined as a means to mediate the learning process.

5.5   POSSIBLE CONTRIBUTIONS OF THE STUDY

This study provided information about what implementation strategies teachers in full-service schools and special schools employed with learners who were visually impaired. The study furthermore provided insights into the ways in which the different schools differed in their implementation strategies as well as the specific resources which they required to provide adequately for learners who were blind and learners who had low vision. More specifically, the study provided details of how the different schools contributed to inclusive education policy based on the principles in White Paper 6 (Department of Education, 2001) in respect of learners who were visually impaired. The study moreover also provided insights into the specific resources that teachers needed in teaching strategies with learners who were visually impaired. Thus this study explored a body of knowledge regarding visual impairment which had not previously been reported on extensively in South Africa.

Furthermore, this study added to the knowledge base in this field, complementing existing literature, which shows how teachers in full-service schools are actually implementing inclusive education. Rather than report briefly on implementation in general, the study looked at the strategies in full-service schools in depth by specifically naming the strategies employed, affording teachers the opportunity to share the knowledge that they had with regard to learners who were visually

impaired. As previously mentioned, teachers in full-service schools lacked the appropriate knowledge and skills to implement inclusive education with learners who were visually impaired. Knowledge-sharing on the part of the participating full-service schools to other teachers who have the responsibility of including learners with visual impairment in their classrooms could therefore be facilitated. Similarly, the study also highlighted the importance of teachers in full-service schools having adequate knowledge to be effective implementers of inclusive education policy in South Africa. Teachers in full-service schools therefore need to be provided with more opportunities to enhance their knowledge base to include learners with visual impairment so they would be able to fulfil their responsibility as the primary source of implementation.

5.6   CHALLENGES AND LIMITATIONS OF THE STUDY

A common limitation often expressed with regard to qualitative studies is the inability to generalise the findings to other populations. However, this multiple case study was not designed to generalise but rather to gain in-depth insight into the strategies that teachers used in implementing inclusive education policy. The findings could potentially be used to draw conclusions in similar contexts, that is, in full-service and special needs schools, but not for generalising.

Another possible limitation lies with the subjectivity of the researcher. Researcher subjectivity often has the potential to have an impact on the way the findings of the study are reported and interpreted. Having previously been a teacher in Botswana, I was already aware of certain challenges that teachers faced and I was accustomed to what it meant to consider the needs of all learners in a classroom. However, in order to circumvent this limitation I engaged in regular reflection and debriefing with my supervisors and co-researchers to ensure that my own assumptions, derived from my own teaching experiences, did not have any bearing on my interpretation of the findings.

Furthermore, during some of the PAR-based workshops some of the participants dropped out, therefore not participating to the end, in so doing reducing the number of participants that was originally anticipated. The workshops were moreover at times presented in the mornings, during school hours, which interrupted in the duties of the

participants. In some cases the workshops took place after working hours in the afternoons, meaning that these teachers had to stay behind. This could have contributed to some of the poster-related data-collection processes being rushed and participants not being fully engaged. However, I viewed the data-collection process as a positive experience and it assisted me with developing my skills set as a qualitative researcher.

5.7 RECOMMENDATIONS

The following sub-sections include recommendations for training, practice and further research.

5.7.1 RECOMMENDATIONS FOR TRAINING

The findings of this study show that teachers could play a role in identifying their most pertinent needs in regard to the training and preparation of teaching learners who are visually impaired. For the teachers in the full-service schools, this may be particularly beneficial since they are tasked with providing support for learners in the classroom with mild to moderate learning needs. The implementation strategies that were mentioned in this study could be used to enhance teacher training programmes at universities and colleges, workshops provided by other relevant stakeholders such as the Department of Education, the DBST and ILST and other professional development opportunities specifically designed to improve inclusive education implementation strategies in the classroom. In receiving such training, teachers would be better equipped to provide sufficiently for learners who are visually impaired.

5.7.2 RECOMMENDATIONS FOR PRACTICE

In considering the findings of this study, it was clear that they might assist in informing teachers of aspects of their knowledge base relating to implementation strategies in which they might be lacking. This may be extended to include the members of the ILST and DBST to assist them with gaining a deeper understanding of the ways in which they could best support teachers in the full-service and special needs schools in respect of implementing inclusive education with learners who were

visually impaired. This could further inform them to engage actively with teachers in schools to contribute positively to resolving the specific challenges and meeting the needs of the schools in their community.

On a broader scale, I suggested the findings could be extended to include the beginning of an active process of information-sharing and meaningful collaboration between teachers in full-service schools and special needs schools with a view to contributing to successful implementation strategies. These opportunities of collaboration may provide a platform for teachers to share not only knowledge but also to impart practical solutions to challenges that may be encountered when teaching learners who are visually impaired. The findings could furthermore be used for purposes of resource-sharing, training in the use of resources as well as the provision of information on relevant institutions where teachers might seek further opportunities for professional development outside of their immediate community. The implication of the aforementioned for training is linked with research which shows that there is an increasing number of collaborative programmes that aim to enhance teachers' knowledge and practices, which have positive outcomes for implementation (Kempen & Steyn, 2017).

5.7.3 RECOMMENDATIONS FOR FURTHER RESEARCH

Literature on implementation strategies in South Africa is scarce, especially about visual impairment. Therefore, it is recommended to conduct more case study research that focuses on the needs of learners who are visually impaired from the learners' perspective as this could possibly contribute the most effective implementation strategies to this knowledge base.

Building on the findings of the current study, more research could be done to investigate the influence of the specific values such as patience and compassion, which were identified in this study, on implementation strategies with learners who are visually impaired. The outcome of the recommended further study could assist with helping teachers to be more aware of the influence of their own values on inclusive education outcomes. Further study would moreover emphasise the importance of the role of the teacher as emotional support system in the classroom.

5.8   CONCLUDING REMARKS

The purpose of the study was to describe the implementation strategies that teachers in full-service schools and special needs schools employed according to the inclusive education policy in White Paper 6 (Department of Education, 2001). The specific focus of this study was the teaching strategies that the teachers employed. The findings of the study showed that there were various ways in which teachers could be implementers by acting as a direct classroom support system for the learner who was visually impaired. Equally important, teachers needed to be knowledgeable about appropriate adaptations to learning materials to suit the various types of visual impairment, namely blind learners or learners with low vision. The findings highlighted the different ways in which teachers in full-service schools and special needs schools used teaching strategies to assist the learners who were visually impaired.

The findings confirmed that learners who were blind required different teaching strategies from learners who had low vision. Teachers needed to ascertain what adaptation was suitable for each learner to ensure that all learners had equal access to the curriculum. The teachers in the full-service schools demonstrated a lack of teaching strategy when it came to implementation compared to those in the special schools.

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APPENDICES

Appendix A:
Approval to Conduct Research

Appendix B:
Informed Consent Form

Appendix C:
Sample of Coding of Transcribed Posters

Appendix D:
Sample of Coding of Transcribed Participant
Observations

Appendix E:
Sample of Field Notes

Appendix F:
Sample of Coding from Research Diary

Appendix G:
Sample of Axial Coding

Appendix H:
Classroom observation schedule
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UNIVERSITEIT VAN PRETORIA
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Faculty of Education

Ethics Committee

10 October 2017

Miss RKM Modisi

Dear Miss Modisi

This letter serves to confirm that your application was carefully considered by the Faculty of Education Ethics Committee. The final decision of the Ethics Committee is that your application has been **approved** and you may now start with your data collection. The decision covers the entire research process and not only the days that data will be collected. The approval is valid for two years for a Masters and three for Doctorate.

The approval by the Ethics Committee is subject to the following conditions being met:
1. The research will be conducted as stipulated on the application form submitted to the Ethics Committee with the supporting documents.
2. Proof of how you adhered to the Department of Basic Education (DBE) policy for research must be submitted.
3. In the event that the research protocol changed for whatever reason the Ethics Committee must be notified thereof by submitting an amendment to the application (Section E), together with all the supporting documentation that will be used for data collection namely; questionnaires, interview schedules and observation schedules, for further approval before data can be collected. Non-compliance implies that the Committee's approval is null and void. The changes may include the following but are not limited to:
   • Change of investigator,
   • Research methods any other aspect therefore and,
   • Participants
   • Sites
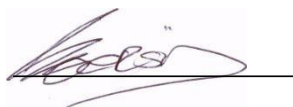
The Ethics Committee of the Faculty of Education does not accept any liability for research misconduct, of whatsoever nature, committed by the researcher(s) in the implementation of the approved protocol.

Upon completion of your research you will need to submit the following documentations to the Ethics Committee for your Clearance Certificate:
   • Integrated Declaration Form (Form D08),
   • Initial Ethics Approval letter and,
   • Approval of Title.

Please quote the reference number **UP 17/06/01 Ferreira 17-002** in any communication with the Ethics Committee.

Best wishes

Chair: Ethics Committee
Faculty of Education

Faculty of Education
Fakulteit Opvoedkunde
Lefapha la Thuto

CONSENT LETTER

Dear Educator

Background:
You are invited to participate in a research study by the University of Pretoria, Department of Educational Psychology. Before you decide to participate in this study, it is important that you understand why the research is being conducted and what your participation will involve. Please take the time to read the following information and ask for clarity you may need.

Purpose of the study:
The purpose of this study is to explore educator's needs, experiences and expectations in terms of the implementation of inclusive education policy, more specifically in support of learners who are visually impaired. The findings of the study will be used to develop a postgraduate diploma in visual impairment studies, in support of teacher training in the field of inclusive education policy implementation.

Research activities:
If you decide to participate you will be expected to participate in two participatory workshops of 2–3 hours each, presented after hours at your school over two days, towards the end of 2017 or beginning of 2018. In addition, you may be requested to allow classroom observation to take place in your class during one morning. Throughout, the research team will be making field notes, taking photographs, making audio-recordings, and observing all activities.

In addition to these activities you will be invited to take part in a colloquium in 2018 in order to discuss the developed module content and share any additional information and ideas you would like to add. Observation, field notes, recordings and photographs will once again form part of this activity. If needed, you may be invited to participate in a follow-up interview.

Benefits of participation:

Your contributions will ultimately inform the development of a postgraduate qualification which will benefit teachers in future. The discussions that you participate in may also be of value and provide you with ideas to implement in class.

Risks:

No risks are foreseen however in the case of any such unfortunate event, we will deal with it in a professional and confidential manner.

Confidentiality and anonymity:

All information obtained will be dealt with in a confidential way and you and your schools identity will be protected. Even though recordings will be made and photographs taken, your face will be disguised except if you opt for it to be shown. All recordings will be transcribed and identities protected by using pseudonyms when reporting on the data. No information or identities will be disclosed to anyone outside the research team.

Voluntary participation:

Your participation in this study is voluntary. It is up to you to decide whether or not to take part. If you decide to take part, you are still free to withdraw from the study at any time and without giving a reason.

Compensation:

There is no monetary compensation to you for your participation in this study.

Consent

By signing this consent form, I confirm that I have read and understood the information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason and without cost. I therefore voluntarily agree to take part in this study.

Full name of participant   ....
Signature   ....
Date   ....
Consent to take pictures and show my face   **YES/NO**
Researcher's signature   ....

Learners who are Visually Impaired: What can Teachers Do?
Poster 1
School A

Group No.	Poster Data	Codes
Participant 1	Give learner **extra time**, **concession**, provision of **visible** pictures, **not** **to use bright colours**	**Extra time** **Concession** **Visible** **Colours**
Participant 2	Teachers **should use large fonts** when writing on the board; Teachers should not **discriminate these learners** and teach other learners to **respect** them; Teachers should be **attend workshops about how to deal with such learners.**	**Large fonts** **Compassion** **Respect** **Workshops**
Participant 3	**Place learner in front;** Use teaching aids **written in big fonts**; **Verbal** **explanation** of activities; Encourage **peer assistance**; Teacher should **be knowledgeable about the barrier** e.g. research, **workshops**; Have relevant resources	**Large fonts** **Learner in front** **Knowledge of eye conditions** **Peer assistance** **Verbal explanation** **Workshops**
Participant 4	Bring learner closer to the pictures; Use **hands and gestures**; **Prescribe books with bigger font to accommodate learners** with decreased ability to see; **Build self-confidence**	**Large fonts** **Emotional support** **Hands and gestures**
Participant 5	**Assess** and **refer** for eye test; **Spectacles**; Lessons on braille; Braille equipment	**Spectacles** **Assess** **refer**

Learners who are Visually Impaired: What do Learners Need?
Poster 1
School A

Group No.	Poster Data	Codes
Participant 1	**Enlarge font books**; **Shades**; **Dimmed window panes**; **Put them in the front** seat; **Buddy**; **Spectacles**; Teacher (individualisation)	**Large font** **Learner in front** **Minimise light** **Peer assistance** **Spectacles**
Participant 2	**Learners should sit in front** so that they can see clearly what is written on the board**; Large font (question papers);** Learners should be assisted in terms of **spectacles**; Walking stick	**Learner in front** **Large font** Spectacles
Participant 3	**Braille; Emotional support;** Walking stick for the blind; **User friendly environment** e.g. ramps, spacious bathroom; **Well-arranged classroom**; Learners be placed in suitable institution (special schools)	**Read and write braille** **Emotional support** **Well-arranged classroom**
Participant 4	**Put a visually impaired learner in front; Use bigger pictures and big letters;** Audio-visual must be clear and loud	**Learner in front** **Large font**
Participant 5	**Enlarged font size; Place him or her closer to the chalk board;** **Blinds can be put on windows to minimise light**	**Large fonts** **Learner in front** **Minimise light**

Learners who are Visually Impaired: What can Teachers Do?
Poster 1
School B

Group No.	Poster Data	Codes
Participant 1	**Identify** learners according to their problems; **Refer** the learner to the relevant institute; **Support** the learners so that they can **feel dignified or valued**.	**Identify** **Refer** **Emotional support**
Participant 2	**Observe** them closely; Make sure that learners wear **spectacles**; Make sure that learners go to check up regularly (have record in profile); Demonstration skills.	**Spectacles** **Identify**

Learners who are Visually Impaired: What do Learners Need?
Poster 1
School B

Group No.	Poster Data	Codes
Participant 1	Learners need **love, support** and inclusivity in class; support resources like braille and a walking Stick; experienced and qualified teachers to help them.	**Emotional support**
Participant 2	**To sit in front**; **extra time** for activities; rich print	**Learner in front** **Extra time**

Learners who are Visually Impaired/Blind (School Context): What do Learners Need?
Poster 1
School C (LSEN)

Group No.	Poster Data	Codes
Participant 1	**Assistive devices (braillers; ruby's (digital magnifiers):** A **camera and monitor** system in class; **Adapted LTSM** (enlarged and Braille) **font must be adapted as well** (Arial); Braille paper and **writing books with boarder and darker lines**; **Special lighting and blinds to adjust natural lighting; Canes and mobility training** for blind learners; **Speech programmes and magnifiers programme for computers**; **Diagrams in Braille** (maths, map work etc).	**Large font** **Minimise lighting** **Orientation and mobility** **Writing books with darker lines** **Adapt** **Assistive devices**
Participant 2	braille writers; **CCTV system**; Braille printers; Embossers; Lots and lots of paper; Printing works; **Adapted tables and chairs**; Special orientation; **Dark lines+ thicker paper**; **Adapted learning material** in different fonts+ braille; **Enlarged and simplified worksheets and pictures**; **Adapted LTSM** (for example zoo boards); 3D models + rules; **Talking calculators; White canes and mobility in structures; Adaptable lightning; Small lamps**; **Ruby/max mouse electronic devices; Understanding different eye conditions**; Development of good special orientation especially for geometry; **Patient** teachers; **Small classrooms**; **Additional time for assessments**; Individual hands on teaching.	**Large font** **Adapt** **Writing books with darker lines** **Adapted tables and chairs** **Orientation and mobility** **Minimise lighting** **Knowledge of eye conditions** **Patient** **Small classrooms** **Adapted assessments**

Learners who are Visually Impaired/Blind: What can Teachers Do?
Poster 1
School D
PAR Day 1

Group No.	Poster Data	Codes
Participant 1	Orientation; Support system; Require training on how to **use assistive devices**; **Basic skills on ICT.**	**Orientation and mobility** **Skills on ICT** **Assistive devices**
Participant 2	**Braille book** - teachers; **Adapt book**, **make notes**; **Teachers provide large prints for those** **with low vision;** Teacher need to know **learn how to use, write and read braille**.	**Read and write braille** **Large font** **Brailled book** **Adapt**

Learners who are Visually Impaired/Blind: What Learners Need?
Poster 1
School D
PAR Day 2

Group No.	Poster Data	Codes
Participant 1	**Mobility instructor**; **Continuous counselling**; **Assistive device** e.g Apex; **Computer literacy skills.**	**Orientation and mobility** **Skills on ICT** **Assistive devices**
Participant 2	**Braille machines**; **Brailled books**; Learners with low vision to be able to enhance their capabilities of what they do; **Get assistance devices** such as magnifying glasses; **Be** **taught ICT skills (**computer skill is a need); **Transition processes (orientation mobility);** **Parents to be more educated (equipped) to be more helpful understanding their kids;** **Acceptance = emotional, mentally.**	**Brailled books** **Parents be more educated** **Skills on ICT** **Emotional and mental acceptance** **Orientation and mobility** **Braille machines**

School C Participant Observation 1

1.Participant 3: **You need to convert this into braille so that they…**	**Adapt**
2. Researcher: And stuff like (Afrikaans)….	
3. Participant 3: Fractions?	
4. Researcher: Yes, fractions how do you…	
6. Participant 3: There is a specific way in which they write it down**. You know in braille there are certain**	**Braille**
7. **rules that you follow.** In a way it's actually more difficult with the sighted because they need to know…	
8. okay in sighted we would refer to on top of the line or underneath the line **but now they have certain**	**Braille**
9. **symbols telling them that you are basically working at the top or at the bottom. But it can be written in**	
10. **one line.** In other words they need to be able to differentiate between them. **There is math braille, let me**	**Braille**
11. **quickly show you…. you see they give you all the different ways in which you can write this down.**	
12. We had an info session on this about two years ago, the RNAB, and then they handed out this so in	
13. other words you need to follow certain rules.	
14. Researcher: So in our diploma this must be included perhaps..	
15. Participant 3: Depending on if they are coming to teach math because this is just going to be	
16. superfluous for someone who does not take math.	
17. Researcher: You have to make it a choice.	
18. Participant 3: Exactly. In this specific field. Say for instance you do CAT or you do maths then they should…	
19. Researcher: Then they should split. Maths teachers can learn this and CAT teachers can learn that.	
20. Participant 3: I actually wanted to show you more. You know if we go to the diagrams there is so much I	
21. can show you, you know. **There are certain things that you need to know to minimise so that you**	
22. **cannot give a lot of info because they normally then get mixed up with too much info. So in other words you**	
23. **need to minimise it and you need to be able to know what is relevant to a specific problem so that you can limit**.	
24. It's like giving somebody a map, **most of the stuff on the map is not applicable to that specific problem so**	**Adapt and simplify**
25**. you have to phase that out and just talk about the relevant stiff on the map**.	
26. Researcher: If you give a child a diagram (3:20 inaudible) like a circle they need to be able to feel it.	
27. Participant 3: They must feel it.	**Tactile**
28. Researcher: **so it must be tactile for them.**	
29. Participant 3: Exactly. **You must not have too much info on**	**Adapt and simplify**

the diagrams. 30. Researcher: Yes, of course. 31. Participant 3: And another thing that helped me so much is to go to the **department at the end of the** 32. **year because then they give you the papers that they will write and they then ask us to help them to basically** 33. **adapt the questions so that is something that helped me quite a lot. There are so many different ways in which you** 34. **can adapt but you must just make sure that you that the degree of difficulty should still be there.** 35. **You can't credit the one and then the other one doesn't get credit for the same.** 36. Researcher: It has to balance… 37. Participant 3: Yes, it has to balance.	**Adapted assessments**
38. Researcher: Most people regard mathematics teaching in terms of the blind as very difficult. In your experience, 39. what would you say? 40. Participant 3: **Up to a certain level most of them can you know cope with the degree of difficulty but it actually** 41**. requires a special skill and I would say patience. Lots of patience.** 42. Researcher: How do you find it? 43. Learner: Maths? 44. Researcher: Yes. 45. Learner: It's difficult and the one thing I always say to people is that no one is too good to drop out of maths. 46. To stick with maths you need a certain level of determination. I mean for me I think I have written one test 47. where I haven't started crying. 48. Participant 3: It's frustrating…. 49. Learner: It's very frustrating. It's difficult. 50. Participant: It is you know very challenging 51. Learner: But at the same time it is very rewarding. If you come out of an exam knowing that you have done well. 52. That you have done the best that you possible could have done that is extremely good. I mean I like 53. maths as a subject, I just don't like all the work that goes with it. But it is a really nice experience for me and 54. I have been able to stick to it. 55. Researcher: Thank you very much. Bye sir.	**Patience**

School C Participant observation 2

1. Participant 4: So we make our own lines…so that is the adaptations that we make.	
2. Researcher: So when you control it here it goes to the rest of them?	
3. Participant 4: Ya. So you can see now whatever is happening here is happening there. **You can even put**	**Assistive devices**
4. **your reader here, your coloured pictures. And you can move this around if you want to show them something**	
5. **on the notice board. This thing can do various things.** There's lots of other things…but those are just the basics.	
6. Researcher: Just briefly, what other things can it do?	
7. Participant 4: Okay I will tell you. And then we make our own books. Our printers they make the books.	
8. We don't use the very very small lines like the ordinary schools because they are writing in small lines	
9. that's very light. You can see that this is darker a bit bigger, not very big but a bit bigger so we are making	
10. our own books where they can write. See this one we also made it. You can't use things that you buy.	
11. Sometimes you can but you must pick them but otherwise it's too small. **The readers as well usually**	**Large font**
12. **they are A5 books but the printers enlarge it for us**. Then when you pick it you must make sure	
13. there is not too much detail…This didn't come out very nice because they can't really see that	**Adapt and simplify**
14. (Picture in reader) but as long as they can read the story. Also if you want to pick a reader see	**Adapt and simplify**
15. that the pictures are not too many detailed. **So we are enlarging that.** Then the light, you must	**Large font**
16. have light **(Inaudible 02:38-02:45).** That is very old but in the olden days they made that black because	
17. we didn't have blinds so not too much light comes in to keep it out. Some of them are light sensitive…	
18. Researcher: Is that the reason they are sitting the way they are?	
19. Participant 4: Yes. And when they look….maybe this eye (Inaudible 03:16-04:38) because	
20. I needed lots of plug points because now I had a reader that needed a lamp. She worked	
21. with it (Inaudible 04:53-04:50) put the lamp right here for her to work (Inaudible 05:02-05:05)	
22. We take it out from the library from the occupational therapist and by the end of the year we give it back.	
23. **Closed circuit television system.**	**Assistive devices**
24. Researcher: It allows the learners to share the screens?	**Assistive devices**
25. Participant 4: **Ya, ya. We connect to a DVD to you can show them a DVD or you know**	

26. **like stories or whatever**. Then we have got our periods where we go to the swimming pool	
27. because that is the one sport that they are good at. Not good at but they can do it.	
28. You know they can't play rugby where they bump their eyes. They play soccer (**Inaudible 06:16**)	
29. but that's not like rugby. And then they go out, they have got a music period where they do some	
30. music and some individuals doing some piano lessons so we are great on the music.	
31. You can put things on the wall but they can't really see from there to here so they must	
32. come and stand here to see what's going on here.	
33. Researcher: You allow them space to move around….	
34. Participant 4: Because you must make them aware because the come here and then	
35. they are not aware that they can see. They just sit and think they can't see so you must	
36. make them aware to use their eyes. When they are younger they think oh mommy will	
37. come and do it for me but you must make them aware. Stand up and search for it…if you	
38. are in the street look in the windows if you can't see a word, spell that word, get used to	
39. reading because otherwise they get lazy to read, "no I can't read because I can't see" and	
40. you must make them aware to look on the TV. They come here especially when they	
41. come in here and they were in Grade 1 and 2 somewhere else then they don't know that	
42. they can actually look for themselves on the TV and write and read for themselves. They	
43. get lazy (Inaudible 08:02-08:07). Go out somewhere and you can try read the words	
44. because on the television they say the children can't read, the country can't read.	
45. You must make them aware to read any sight words.	
46. Researcher: In your experience of having been in this setting what would you say is	
47. the main challenge that learners experience?	
48. Participant 4: You know to see…to see far. To be able to read something. That is	
49. a big challenge. If you only see here or there or blurry and to help them to actually try and see.	
50. Researcher: And for yourself as a teacher?	
51. Participant 4: **You must be very patient.** You must go through the curriculum. We are doing	**Patience**
52. exactly the same as the other schools but now they are slower. Also you have got English	

53. and Afrikaans in one class. We didn't even say you must be able to talk in English and	
54. Afrikaans so what I say in English I also do in Afrikaans. I do double the work. If I do one	
55. lesson in English, I must also do the exact same thing in Afrikaans. **When I do an assessment**	**Adapted assessments**
56**. I do it in home language and it is finished but then I must go and do it exactly the same in Afrikaans.**	
57. **If they get an assessment in English then they must get the same assessment in Afrikaans.**	
58. That takes time. You must know how to (Inaudible 10:00-10:05) manage your time.	
59. Time management is now crucial because you must do English and Afrikaans and you	
60. must do Additional English and Afrikaans so you have got two more subjects now.	
61. And you must generate your own learning materials. So it takes time and you must finish in	
62. time with the ordinary schools.	
63. Researcher: The most positive experience you could say as a teacher you have had in the school	
64. or you are having, what has it been?	
65. Participant 4: The most positive experience…well it's when you know you struggle and you	
66. get a child in Grade 1 or Grade 2 and they cannot read and then you send them to braille and	
67. they must learn braille in their third year or when they have been there and they must come	
68. here and then now you see that child in matric. That is wonderful and you think how it went	
69. from here to here and trying to place him in the correct way, how will you help him, how will you	
70. get him through Grade 3 and then one day that child is a big man in adult school or matric and they	
71. come and they say thank you or they come and they say they are working there or working here,	
72. that is wonderful. And you see them here when they are small and you think that they will never get there.	
73. All the stumbling blocks…know that you had to go through and overcome. If you think of all the obstacles	
74. and that they still overcame and they even go to university.	
75. Researcher: During assessment, what happens in terms of time? Do they finish their tests?	**Adapted assessments**
76. Participant 4: **I give them double time all the time.** You don't concentrate on neatness. You know	
77. in other schools they say the writing must be like this or very neat and concentrate on…you can't	
78. concentrate on that now. I mean I try but they do work	

quite neat but I am not going to penalize 79. someone who cannot work neat. Like this is not too bad. I can't penalize her for that, you see 80. she started big but I am trying to get her to write smaller and there she got it.	

School C Participant observation 3

1.Participant 5: Let me quickly show you the writing process. This is home-made… 2. this is part of wine bottles. So especially in Grade 2 we teach them the letters of the alphabet. This is very easy to 3. handle. We prefer this one because its big and fast. There are smaller ones but this one 4. they can manouvre it and you can test whether they know it or not. He has already started to 5. write half the alphabet and now you can see what is next. Because you have two languages in one class 6. normally there is a big difference. I can tell you there is a big difference between the children in the class. 7. Some of them are very slow and some of them are having ADHD (**Inaudible 01:40-01:45**). This is too big. 8. If you have a smaller group (**Inaudible 02:00-02:02**). It's bigger group you suffer because…for every 5 children in 9. the school you have one teacher so that's the ideal, the best but I have 10, imagine, which is equal to 55 children 10. in a mainstream school. The younger they are the more difficult it is to teach them. 11. Researcher: Their challenges they face as learners? 12. Participant 5: You know what, most of the time their parents don't know in stimulating them, that is our biggest 13. problem. They are so far behind it is difficult for us to catch up. Time is so limited, the day is so short. 14. We do it in the afternoon and in the morning, we do intervention with them if that is possible. There are children, 15. some of these children, they lock them up in cages and rooms and I don't talk about black, white also. 16. They just lock them up and forget about them. Then they come to us and they don't talk then we must do the miracles. 17. Researcher: The joys that you have experienced thus far? 18. Participant 5: It is such a joy to see these children when they go in one year on to see what they 19. can manage in one year. You are sometimes so surprised what you remember what they did in the beginning. Last 20. year I had a child who had to do a Grade 1 year in a Grade 2 class. So she had two years in Grade 1 and she	

|	
21. couldn't do anything but now she is flourishing. I also had a child who couldn't read braille. He manages is whole	
22. Grade 2 year and he manages braille and he went on to Grade 3. Those are the rewards. The best reward	
23. is when they come back when they are in matric and they say goodbye. The always come back,	
24. they even invite you to their weddings. They really are our children and we care for them.	
25. If one of them dies, and it does happen. Some of our children get bone cancer because you	
26. have eye cancer…and that is really…it's like they are our children so it is really bad for us	
27. when they die or things like that happen. They are our family, we care for these children like family.	
28. Don't touch my children then you have trouble. **They are really our children, you will see how much**	
29. (Inaudible 05:42-05:46)…**mommy didn't have the money to buy then you make a plan.**	
30. **Anything that the child needs, it doesn't matter what emotionally, physically whatever….**	**Support system**
31. Researcher: You try to be there….	
32. Participant 5: Ya	
33. Researcher: Thank you so much.	
34. Participant 5: **We give them any support. And sometimes far more than what is expected from us**	
35. **Sometimes the parents don't even know it. We don't tell them because they don't need to know**	
36. Researcher: If you were to give advice to teachers who do not have braille but have to learn braille…	
37. Participant 5: You are only talking about braille. For me braille was not so difficult because….	
38. What happened to me was, this was 20 years ago, in December the principal told me you have to	
39. post for the Grade 2s next year. I took a braille book and I had the braille alphabet next to me and I wrote	
40. above it. When I came back in January I knew it. If you sit and figure out that this is "a" through the context	
41. of the word, you figure out. After you finish a book, say 20 to 30 pages then it's fine. It's not so difficult.	
42. Contractions is difficult but if you have the basics of braille then it goes. So it's not so difficult but the	
43. contractions are difficult, that comes with time.	
44. Researcher: Thank you so much.	
45. Participant 5: It's a pleasure.	
46. Researcher: Just one more thing, do you have teacher assistants?	
47. Participant 5: Yes, but they are not enough. We must share. These assistants are very important to us,	
48. they must help us because there is no time for everything.	

Sometimes with reading, reading is 49. a problem because I have four groups in my class and I must have someone who helps otherwise 50. it takes me from one break to the other break to finish it. They help us with that. 51. We need class assistants that can do braille so we teach them quickly. They must catch up 52. and help us put it in braille and go to the braille room and do things like that 53. Researcher: Thank you very much.	

Appendix E:
Sample of Field Notes
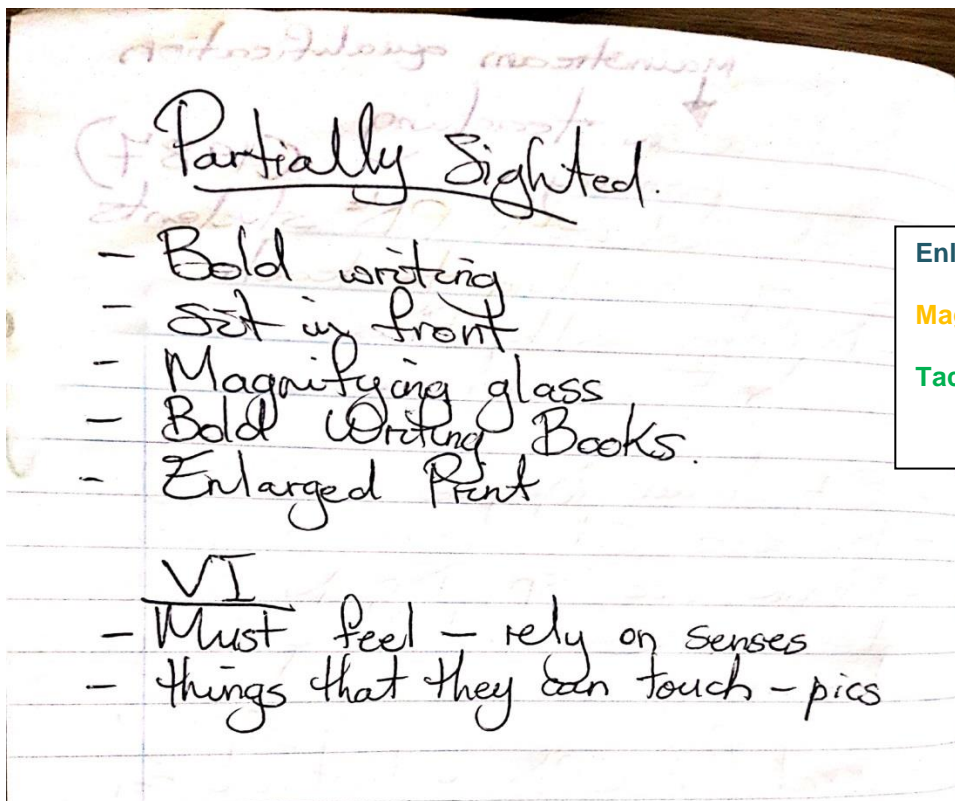
Enlarged font

Magnifying glass

Tactile learning

* calls them to board to explain
* so can see explanation on board.
* Use cellphone for info — when Wi-Fi not working
* well organized + put together/class.

Gr. 12
3 girls
3 boys
Computer Assisted Technology

peer connection to tshwane wifi

* multisensory to get their attention with visual aids.
* interacts well with students.

7 February 2018
School D
There is quite a small number of participants for today's PAR-based workshop. After explaining the process of the research one of the participants voluntarily withdrew herself from the process as she had a look of work to do. The workshops at today's school are happening in the morning as opposed to the afternoon. It was agreed that we will do the participant observations first then we will do the PAR-based workshop afterwards.

After the participant observation and the PAR-based workshop for today **I have come to realise that it is not enough to simply rely on verbal explanation but to implement inclusive education with learners who are visually impaired there is a vast amount of resources in the form of technology which can better help the teachers in making the learning process easier.**

I am actually surprised that the teachers took the initiative themselves to go and learn braille and sign language themselves so that they would be equipped to be able to teach learners who are blind and deaf. They say that braille is the main medium of instruction for learners who are blind therefore it requires a lot of work to actually be able to teach learners who are blind. Not only does one have to be fluent in reading braille **but they must also know how to convert reading materials such as textbooks, tests and examinations into braille.**

14 February
School A
We arrived at the school at 8am where we are then taken to the vice principal's office. He was very professional and accommodating and seemed quite happy that we had come back to the school to conduct the research. A good rapport had been established from the visit we had done late last year when I had come with one of my co-researchers to drop of an information packet about the project to the principal. We went straight into the participant observation with a foundation phase class. The class was very full and was almost in stark contrast to the exterior of the school, which was very well organised and quiet when outside. The teacher was very preoccupied with administrative work and had given the learners a class activity to do.

Two learners who she had identified as being visually impaired were seated in front. One of the boys seemed to not be following what was happening in the class. He took his book out some time later. It may be difficult for the teacher to be aware of this as she was busy with her own work which she stressed needed to be given in that day hence why she was doing it at that moment. When we mentioned seeing her

later at the PAR-based workshop in the afternoon she was confused and was not aware that anything had been scheduled for the afternoon.

At the PAR-based workshop a lot more teachers showed up than I had initially anticipated. They do seem a bit rushed to want to finish as it is Ash Wednesday today and they want to attend the service at their respective churches. **They are asking a lot of questions about what they are required to answer and it seems that they do not really know a lot about visual impairment and learners who are visually impaired.**

Open Codes	Axial Codes	Inclusion and Exclusion Criteria
Understand **Respect** **Interest** **Passio** **Patient** **Willing to learn**	**Teachers' personal values**	**Inclusion:** Personal values and skills that align with inclusive education policy **Exclusion:** Personal values and skills that do not align with inclusive education policy
Braille books **Braille machines** **Embossing machine**	**Resources**	**Inclusion:** Objects, machinery, technology that enhances learning **Exclusion:** Objects, machinery or technology that obstruct learning
Read and write braille **Different teaching methods** **ICT skills** **Adapt to circumstances** **Adapt** **Identify**	**Teachers skills that are required**	**Inclusion:** Skills that the teacher uses to enhance learning **Exclusion:** Skills the teacher has that obstruct learning
Large font **Assistive devices** **Colour** **Workbooks** **I'll try really hard to explain** **Tactile material**	**Instructional adaptations**	**Inclusion:** Modifications, changes and/or accommodations to classroom activities and classwork to enable teaching **Exclusion:** Modifications, changes and/or accommodations made to classroom activities and classwork that obstruct teaching
Inclusive education is good **Inclusive education is important** **Move away from inequality** **Accessible environment**	**Teacher attitudes toward inclusive education**	**Inclusion:** Attitudes that enable teaching **Exclusion:** Attitudes that obstruct teaching
Amenuensis	**Adaptations of**	**Inclusion:** Modifications,

| Open Codes	Axial Codes	Inclusion and Exclusion Criteria
Concessions	**assessments**	changes and/or accommodations made to tests and examinations, whether internal or external, to enhance learning **Exclusion:** Modifications, changes and/or accommodations made to tests or examinations that obstruct learning
Emotional and mental acceptance **Support system**	**Provision of emotional support**	**Inclusion:** Any emotional support given by the teacher **Exclusion:** Emotional, social and physical support given by a non-teacher figure (anyone other than a teacher)

---ooOoo---

OBSERVATION SCHEDULE FOR UNOBTRUSIVE CLASSROOM OBSERVATION

1. **Information about class observed**

Grade of learners:	
Number of learners in class:	
Number of functionally blind learners:	
Number of learners with low vision:	
Lesson observed:	

2. **Drawing of classroom layout:**

– time management challenge

– class on adapting/using through curriculum
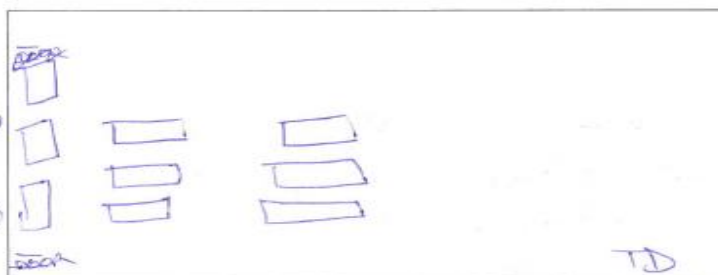
3. **Classroom walls:** Are classroom aids on walls accessible/adapted? Describe/photos.

No blackboard
– Print own notebooks

4. **Field notes** on classroom atmosphere/culture, teacher behaviour, learner involvement, differentiation:

– extra time for assessments
– not focus on neatness

closed circuit television system
– 2 students per monitor
– magnifying screen – use of magnifying glasses from CP.
– adjust seating according to needs of child.
– adjustable lighting
– make them aware to use their eyes – use
  ↳ teach independence to them
Afrikaans + English in one class – have to teach twice