Towards developing teacher competencies for the holistic enablement of visually impaired learners

by

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Researcher's declaration

I, Magrietha Jacoba Malan, declare that "Towards developing teacher competencies for the holistic enablement of visually impaired learners" is my own work. It has never before been submitted in any form for any qualification in any tertiary institution. The sources used have been acknowledged.

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DEDICATION

This work is dedicated to my parents, who taught me about work ethics, resilience, faith, humility, unselfishness, service and joy in life. Mom and dad, you have always supported me through thick and thin. You have always believed in me and carried me through difficult times. I hope that, through this work, I will have carried your values forward.

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ABSTRACT

Despite South Africa's adequate legislation for protecting the right to education of people with disabilities, the National Development Plan (NDP) of 2012 found that there are still cases of this right being infringed. In 2015, Hodgson and Khumalo, two Section 27 reporters, identified challenges at schools for the visually impaired, such as insufficient basic assistive devices, a lack of accessible textbooks, lack of funding, serious staff shortages, inadequate orientation and mobility instruction, and teachers who are incapable of reading and writing Braille (Hodgson & Khumalo, 2015). One of these challenges, insufficient teacher development, is the rationale for this study. The study is part of research that informs the programme outline for an advanced diploma in visual impairment studies. The purpose of the study was to identify the core competencies (knowledge, skills and values) that teachers of the visually impaired need. A competency in this sense refers to "an ability to carry out a specified task or activity to pre-determined standards of attainment" (Buultjens, 1997). These competencies had to be based on or aimed at the unique needs of the visually impaired learner. For this purpose, the experiences of different stakeholders in the visually impaired community were explored. The project team visited 17 schools in five provinces. These visits involved 240 teacher participants and around 40 experts in the field. Participatory reflection and action (PRA) workshops were conducted following an action research design. It was reasoned that a consultative and collaborative approach would have results that would lead to a programme outline to address the practical, everyday challenges of learners and teachers. Because the researcher is a full-time teacher, she could unfortunately not join the team on all the visits. However, she conducted individual semi-structured interviews with four parents, two school-leavers, three blind adults, two occupational therapists and three teachers. Participants were encouraged to have the holistic education of a visually impaired individual in mind when answering the questions. In the data analysis phase of the study, the researcher chose to use applied thematic analysis (ATA), which is a type of inductive analysis of qualitative data that can involve multiple analytic techniques. Three themes were identified after the analysis: values and attitudes, accessibility and transition. It is hoped that the competencies identified by the participants will feed into the framework of a practical, high-quality programme outline for an advanced diploma for teachers of the visually impaired so that young adults will be enabled to access society and the world of work as holistically functioning individuals.

Keywords: Visual impairment, needs, competencies, knowledge, skills, values, holistic enablement.

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Language editing

This serves to confirm that the thesis, "Towards developing teacher competencies for the holistic enablement of visually impaired learners", submitted by Marietha Malan for the Master's Degree in Educational Psychology in the Faculty of Education at the University of Pretoria, South Africa, was edited for language use, spelling and grammar by a qualified language editor. The edited document was provided in track changes, and it was the student's responsibility to accept or reject the suggested changes. Recommendations were also made with regard to missing references.

Kind regards

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ABBREVIATIONS

3D	Three-dimensional
ABA	Applied behaviour analysis
ADHD	Attention Deficit Hyperactivity Disorder
ATA	Applied thematic analysis
CHARGE	Coloboma, heart defects, atresia choanae, retarded growth and development and ear anomalies, and deafness
DBE	Department of Basic Education
DHET	Department of Higher Education and Training
EAHCA	Education for All Handicapped Children Act
ECC	Expanded Core Curriculum
EU	European Union
HOD	Head of Department
ICEVI	International Council for Education of People with Visual Impairment
ICT	Information and Communication Technology
IDEA	Individuals with Disabilities Education Act
I-M-ABLE	Individualised Meaning-centred Approach to Braille Literacy Education
ISP	Individual Support Plan
JAWS	Job Access with Speech
LSEN	Learners with Special Needs
LVA	Low vision aids
MDVI	Multiple disabilities and visual impairment
MRI	Magnetic resonance imaging
MRTEQ	Minimum Requirements for Teacher Education Qualifications
NDP	National Development Plan
NLBCT	National Literary Braille Competency Test
NVCA	Non-visual Computer Application
PRA	Participatory Reflection and Action
SANCB	South African National Council for the Blind
SEN	Special educational needs
SGB	School Governing Body
SIAS	Screening, Identification, Assessment and Support
TAPS	Teaching Age-appropriate Purposeful Skills
TEACCH	Treatment and Education of Autistic and Communication-related handicapped CHildren
UNCRC	United Nations Convention on the Rights of the Child
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNESCO	United Nations Educational, Scientific and Cultural Organization
VI	Visual impairment
VSK	Values, skills and knowledge
WHO	World Health Organization
Wits	University of the Witwatersrand

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CHAPTER 1 ORIENTATION OF THE STUDY

1.1   Introduction and background

South Africa's ratification of the United Nations Convention on the Rights of the Child (UNCRC) in 1995 and the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2007 has facilitated a legislative framework that seems to entrench the educational rights of learners with disabilities (DSD, DWCPD & UNICEF, 2012). Section 29 of the South African Constitution guarantees the right to basic education, including basic adult education, to everyone (South Africa, 1996a). Section 12 of the South African Schools Act, Act No. 84 of 1996 (South Africa, 1996b) obliges members of provincial executive councils to ensure that education for learners with special needs is provided at ordinary public schools where reasonably practicable. White Paper 6 of 2001 (Department of Education, 2001) outlines government's strategy to make the education system more just and equitable so that previously marginalised learners with disabilities can be included in mainstream schools. The National Development Plan (NDP) of 2012 promotes an accelerated roll-out of inclusive education that is aimed at integrating people with disabilities in society and enabling them to exercise a whole range of human rights in a free and equitable manner (National Planning Commission, 2012).

However, the Baseline Country Report to the UN Convention on the Rights of Persons with Disabilities (UNCRPD), which was approved by Cabinet in April 2013, highlights numerous challenges that still exist with regard to the education of children with disabilities. The report quotes the Department of Basic Education (DBE), which estimates that the number of children with disabilities of school-going age that are not in a school may be as high as 480 036. It acknowledges that implementation problems with regard to White Paper 6 cause a large number of children with disabilities to be either completely excluded from school education or unable to effectively access either the mainstream or the special school curricula. (South Africa, 2013).

With regard to visual impairment, the Baseline Country Report states that changes in the curriculum resulted in a delay in issuing Braille and large-print textbooks to learners with visual disabilities. This is partly due to a lack of capacity in the national Braille printing facilities. The report also found that 59 special schools that educate learners with sensory disabilities lacked qualified teachers. Some 781 educators had a basic knowledge of Braille, but had no qualifications. Some 89 educators who taught visually impaired learners did not have any knowledge of Braille at all (South Africa, 2013).

The Draft Policy on the Minimum Requirements for Teacher Education Qualifications (Department of Higher Education and Training, 2010) emphasises the critical need to reintroduce teacher education certificates with specialisation in areas such as the education of learners with hearing and visual disabilities and learners with autistic spectrum disorders and intellectual impairment. Academic authors in the field of educating learners with visual impairment across the world emphasise the need for specialised teacher development. Spungin and Ferrell (2007) maintain that a critical member of the team of professionals who work with visually impaired learners is the teacher, "whose specialised training and experience establish him or her as the individual best qualified to address the unique learning needs created by a visual impairment" (Spungin & Ferrell, 2007, p. 1). Ravenscroft (2015) points out that, in order to teach learners with visual impairment in Scotland, teachers must obtain an additional mandatory qualification in visual impairment.

In order to ensure that the qualifications of teachers who teach visually impaired learners are relevant and practical, a number of stakeholders in other countries have been engaged in the past to pin down some competencies that teachers of the visually impaired need. One such instance was the European conference of the International Council for Education of People with Visual Impairment (ICEVI) in March 1997. Although the conference was held 21 years ago, the list of desired competencies identified during the conference still ring true today. Marianna Buultjens defined the term "competence" in the introductory address. In this sense, a competence, refers to "an ability to carry out a specified task or activity to pre-determined standards of attainment" (Buultjens, 1997). Using a competency-based approach means describing what the student will know and do at the end of the study, rather than simply stating the course content (Buultjens, 1997). These competencies are usually described in a way that is demonstrable by students and assessable by the university supervisors (Chong & Cheah, 2009). Chong and Cheah (2009) introduced a values, skills and knowledge (VSK) framework for teacher training. This framework was based on the desired skills and knowledge for beginner teachers, with underlying core values permeating the curriculum (Chong & Cheah, 2009).

It is vital that teacher competencies are based on the needs of the learners that they are required to teach. According to Fraser and Maghuve (2008), any curriculum that is not learner based and learner paced will hinder the blind and visually impaired learner from learning and actively participating in the learning mediation to his or her full potential. Learners with visual impairments present various challenges to the teacher with regard to their physical, cognitive and psychological needs.

According to Mauro and Morris (2015), these learners may:

- be totally blind or have varying degrees of low vision;
- be born with a visual impairment or may have acquired the visual impairment some time later in life;
- have additional disabilities such as autism, emotional disturbances, intellectual disability or multiple disabilities, which often pose behavioural challenges;
- have a visual impairment due to neurological causes (cortical visual impairment); and
- have additional medical needs and considerations.

With regard to academic needs, visual impairment creates tough challenges for the teacher. For example, Mauro and Morris (2015) point out that a child with little or no vision may have a fragmented understanding of the world. Some concepts are entirely visual, such as colours, rainbows, clouds and the sky. Some are too large to experience completely, such as mountain ranges and oceans. Other items are too tiny or delicate to understand through touch, including small insects or a snowflake. Some items are inappropriate to explore through touch, such as wild animals or toxic substances.

In addition to these academic challenges, Sapp and Hatlen (2010) point out that the instructional needs of visually impaired learners are far wider than the traditional reading, writing and arithmetic curricula. Instructional needs that are additional to the needs of the academic core curriculum are commonly referred to as the expanded core curriculum (ECC) (Sapp & Hatlen, 2010; Progrund, Darst & Boland, 2013; Blackshear, 2014; Lieberman, Haegele, Columna & Conroy, 2014; Mauro & Morris, 2015). The ECC consists of the following nine areas: compensatory or access skills, career education, independent living skills, orientation and mobility skills and concepts, recreation and leisure skills, self-determination skills, social interaction skills, using assistive technology, and sensory efficiency skills (Sapp & Hatlen, 2010). These authors demonstrate how crucial it is that teachers who instruct learners with visual impairments are aware of the need to view the education of these learners holistically.

1.2   Problem statement

The need for action to address challenges with regard to special needs education has become more pressing after a judgement by the Western Cape High Court in the Cape Forum for Intellectually Disabled against the South African Government in 2011. Western Cape education authorities were instructed to develop an intervention plan within 12 months that would provide access to education for children with severe and profound intellectual disabilities (South Africa, 2013). The Baseline Country Report (South Africa, 2013) makes it

clear that challenges with regard to the provision of learning material and teacher training are threatening the right to education of learners with visual impairments. Subsequently, the Department of Higher Education and Training (DHET) instructed the University of Pretoria to develop an advanced diploma for pre-service and in-service teachers of visually impaired learners. The diploma will be called 'Advanced Diploma in Visual Impairment Studies', presented on NQF level 7. This study forms part of the research that will inform the outline of the diploma programme. The study will focus on learner needs and teacher competencies in the field of visual impairment.

The problem of deciding which core competencies need to be included in the proposed advanced diploma for teachers of the visually impaired is a tough one. Many voices compete to be heard in this regard. The study of Chong and Cheah (2009) recommends different approaches that may be helpful in the formulation of the core competencies that are necessary to address learner needs holistically. In this study, the researcher makes use of two of these approaches. First, she uses a research-based approach (Chong & Cheah, 2009), which encompasses an in-depth review of literature on best practices and models in teacher development (especially with regard to visual impairment). Second she uses a "professional consensus" approach (Chong &, Cheah, 2009), where main stakeholders (teachers, therapists, parents, visually impaired adults and school leavers) are consulted during interviews and workshops.

The rationale for conducting research in a consultative and collaborative way is to ensure that the competencies that are identified feed into a relevant and practical programme outline. Some teacher development activities frustrate teachers and make them feel that their time has been wasted (Glathar, 2008). Making use of the experiences of stakeholders will minimise this frustration and ensure that the advanced diploma addresses current challenges that are specific to the education of the visually impaired in a country such as South Africa, where Third-World conditions still exist in some areas. Well-trained educators with relevant competencies will not only benefit the educators themselves and the schools in which they work, but will benefit the visually impaired learners in particular, who will be enabled to become productive members of society.

1.3   Rationale and purpose of the study

As a mother of two children with disabilities and a special needs teacher, the researcher has a passion for special needs education. Often in her career, and as a mother, she has experienced how a lack of appropriate training can impact negatively on the ability of special needs teachers to address their learners' needs. The purpose of this study was to explore

the experiences of stakeholders in the visually impaired community. The assumption was that the results generated by the study would help to identify the core competencies (knowledge, skills and values) needed by teachers of the visually impaired in a South African context. The competencies of teachers of visually impaired learners should address their specific needs and challenges. Participants were encouraged to think holistically about the needs of visually impaired learners when relating their experiences. Ultimately, the aim will be to enable visually impaired learners by providing teachers with the competencies to address their needs holistically.

1.4 Research questions

1.4.1 Main research question
The main research question is as follows:

Which core competencies should be included in teacher development to equip students to address the needs of South African learners with visual impairment holistically?

1.4.2 Subquestions
The following are the subquestions of this study:

- Which needs of visually impaired learners need to be addressed at school level in South Africa to allow holistic enablement?
- Which competencies, such as knowledge, skills and values, should a teacher of the visually impaired attain to meet the needs of visually impaired learners?

1.5 Concept clarification
The tenth revision of the International Classification of Diseases (ICD-10-CM) (Diagnosis Code H54.9: unspecified visual impairment) (World Health Organization, 2017) identifies the following ranges of visual loss:

- **Blind:** The term "blind" refers to visual acuity of less than 3/60 or corresponding field loss to less than 10 degrees in the better eye (WHO, 2017).
- **Unspecified visual impairment:** Visual impairment includes low vision, as well as blindness. In this study, the researcher uses the abbreviation VI from time to time to refer to visual impairment (WHO, 2017).
- **Low vision:** Low vision refers to visual acuity of less than 6/18, but equal to or better than 3/60, or a corresponding visual field loss to less than 20 degrees in the better eye with best possible correction (WHO, 2017).

Other concepts that the researcher refers to in the study are the following:

- **The Expanded Core Curriculum**: The ECC refers to skills and knowledge that have to be acquired in addition to the usual school curriculum (Mauro & Morris, 2015). For the purpose of this study, the ECC refers to matters such as orientation and mobility, assistive technology skills, career guidance, social interaction skills and self-care skills, as described by Mauro and Morris (2015).

- **Orientation and mobility:** Hodgson and Khumalo (2015) quote the definition of Karin Swart, Principal of the Prinshof School for the Blind of orientation and mobility: "Orientation and mobility training helps a learner to picture in his or her mind where and what is in his environment" (Hodgson & Khumalo, 2015, p. 13). For the purpose of this study, the term "orientation and mobility" refers to the training of the visually impaired learner to orientate himself or herself in his or her immediate surroundings and move about safely.

1.6 Paradigm

According to Sefotho (2015), methodology has to be informed by a paradigm. Within paradigms, there are many methodologies to choose from. "Thus, methodology is concerned with why, what, from where, when and how data is collected and analysed (Sefotho, 2015, p. 37)". Sefotho (2015) cites Hesse-Biber and Leavy (2011), who point out that there are three major methodological approaches in qualitative research: post-positivist, interpretive and critical realism. Critical realism has been chosen as paradigm for this study.

1.6.1 What is critical realism?

Critical realism is an alternative paradigm to scientific forms of positivism, as well as the strong interpretivist or postmodern paradigms, and is particularly associated with the work of Bhaskar (Bhaskar, 1989; Archer, Bhaskar, Collier, Lawson & Norrie, 1998; Sayer, 1997). Generally, a realist's understanding of the world takes the view that a reality (including social structures) exists "out there", is independent of observers (Easton, 2009) and it is possible to gain reliable knowledge of it (Mingers, 2004). The qualifier "critical" indicates that critical realism is neither naively realist/naturalist, nor is its social theory predominantly governed by interpretivist principles (Mingers, 2004). It is concerned with the nature of causation, structure and relations and combines explanation and interpretation (Archer et al., 1989). The researcher chose critical realism for this study because she strongly felt that there are objective facts in relation to the challenges of visually impaired leaners. Learners with visual impairment have specific needs that are caused by the reality of their impairments. Participants' experiences will be utilised to inform effective teacher development that is aimed at addressing these specific needs.

1.6.2   Ontology

Critical realists believe in a "stratified ontology" that draws a distinction between the "real", the "actual" and the "empirical" (Bhaskar, 1979). Mingers (2004) provides a simple explanation of these three strata: The "empirical" refers to events that are actually experienced and observed, such as a person observing the time on a clock. The "actual" refers to events that are caused by certain mechanisms that may not have been observed, such as the hands of the clock ticking, and the "real" refers to the causal mechanisms, such as the inner workings and springs of the clock (Mingers, 2004). Translated into the realm of visual impairment, one might say that a teacher sees that a child keeps turning his head when he looks at something (the empirical). She refers the child to an ophthalmologist, who diagnoses the child with peripheral vision loss (the actual). There are various causes of peripheral vision loss. In this case, the child has *retinitis pigmentosa* (the real).

1.6.3   Epistemology

Interpretivists are criticised for what critical realists refer to as "the epistemic fallacy". Simply put, this term refers to the flawed premise that reality itself is the same thing as *knowledge about* reality (Bhaskar, 1989). Interpretivists use terminology related to "making" rather than "conceptualising" entities. For example, according to interpretivists, phenomena are "created", "constructed", "generated" or "produced" by our conceptual activities. Critical realists believe that reality exists independently of our knowledge of it, but that it can be known and understood. Therefore, phenomena are "made sense of", "interpreted", "comprehended", "framed" or "called to attention" (Fleetwood, 1999). Other than empiricists, critical realists do not try to predict outcomes in terms of general laws. To the critical realist, our knowledge of the world is fallible and theory-laden (Easton, 2009).

1.6.4   Axiology

Critical realism maintains that social science can never be value-neutral (Gorski, 2013). As a result, researchers should admit and deliberately include their cultural orientation and personal values in the research process (Oppong, 2014). Nieuwenhuis, Beckmann and Prinsloo (2014) define a value as "something worth striving or living for". They point out that values fulfil a motivational and directional purpose. "Values serve as beacons to help us navigate the unpredictable seas of human existence" (Nieuwenhuis et al., 2014, p. 10). Because we – as a community – attach importance to the things we value, we can derive certain principles from them. These principles will lead to rules, by which we measure right or wrong. For example: Because we value honesty (value), we will not lie or deceive others (principle). The rule: "You may not lie" then becomes the norm to measure right or wrong (Nieuwenhuis et al., 2014).

For visually impaired persons to be part of society and to live a fulfilling, meaningful life, they need to be equipped with a strong belief in their abilities and equal rights. They need to be exceptional hard workers with sound work ethics and an ability to persevere in order to reach their goals. These qualities hinge strongly on values, principles and rules that will be learnt during their school careers. In order to learn these values, the learner needs to have teachers that believe in and display sound values themselves.

1.7   Assumptions for the study

Based on the researcher's literature review, she approached her study with the following assumptions:

a)   A holistic approach is necessary to meet the needs of visually impaired learners at school level. In order to function effectively in society, it is insufficient to address only their cognitive or academic needs at school.

b)   Competence in Braille is vital for teachers to educate learners with visual impairment.

c)   Teaching methodology and curriculum adaptation should be specific to the needs of the visually impaired learner.

d)   Motivation, passion and the will to go the extra mile are some of the values central to the success of teachers of the visually impaired.

e)   The availability and affordability of assistive devices are problematic in South Africa and teachers need to be equipped to think creatively to make do with what they have.

1.8   Quality criteria

Throughout her study, the researcher strived to adhere to the four quality trustworthiness criteria identified by Lincoln and Guba (1985): credibility, transferability, dependability and confirmability. Credibility refers to the researcher's ability to present a true picture of the phenomenon under study. To ensure transferability, enough detail about the context of the fieldwork should be provided in order for the reader to decide whether the findings could justifiably be applied to another setting with which he or she is familiar. Dependability is difficult in qualitative work, although the researcher should strive to enable a future researcher to repeat the study. Finally, to achieve confirmability, the researcher should take steps to ensure that the findings and not his or her own predispositions emerge from the data (Shenton, 2004). In Chapter 3, the researcher elaborates on the strategies she employed to ensure rigour in her study.

1.9   Ethical considerations

Ethics in research means that the researcher is doing good and avoiding harm (Orb, Eisenhauer & Wynaden, 2000). Central to qualitative research is the relationship of trust

between the researcher and the participant(s). Ethical considerations will be discussed in more detail in Chapter 3.

1.10 Conclusion

To arrive at the purpose of this study, which is the identification of the competencies required by teachers of visually impaired learners, the researcher used critical realism as a paradigm to conduct an action research project so that role players in the visually impaired community can contribute towards better teacher training and a better life for each visually impaired individual in this country. In Chapter 2, the researcher will proceed to discuss the literature relevant to the topic and present her conceptual framework.

CHAPTER 2 LITERATURE REVIEW

The wrong things are predominantly stressed in the schools – things remote from the student's experience and need.

(Anne Sullivan)

2.1   Introduction

The preparation and development of quality teachers in education is an important priority in many developing countries (Chong & Cheah, 2009). South Africa has good policies on disability rights and education in place, but in reality, these policies are seldom applied in practice. For example, schools for the visually impaired have a lack of funding, inadequate learning materials and assistive devices, little or no orientation and mobility instruction, and teachers who are incapable of reading or writing in Braille (Hodgson & Khumalo, 2015). Dube (2005) calls this tendency "policy evaporation". Dube concludes that the implementation of policies has had a marginal impact on the lives of people with disabilities. As a result, people with disabilities often have low levels of education and are unskilled. Only 1% of people with disabilities are meaningfully employed (Dube, 2005).

In order to break the cycle of unemployment, the "employability" of people with visual impairment should be addressed (Kaine & Kent, 2013). This can only be achieved by addressing the unique educational needs of learners with visual impairment (Wolffe, Roessler & Schriner, 1992). Rhoton and Stiles (2002) point out that teacher expertise can account for about 40% of the variance in students' achievement in reading and mathematics. This is more than any other single factor, including student background (Rhoton & Stiles, 2002, p. 1). To train expert teachers in the field of visual impairment, they need to acquire competencies specific to the needs of their learners (Ravenscroft, 2015). Chong and Cheah (2009) maintain that these attributes or competencies should be described in terms of knowledge, skills and values, an approach that the researcher has adopted in her study.

In this chapter, the researcher starts by explaining a conceptual framework for the study, which refers to teacher competencies (knowledge, skills and values) and to the way universal design principles ensure accessibility in education. Different disability models are discussed in this chapter, leading up to the creation of the researcher's own disability model, the Holistically Enabling Model, which is based on the Aspects of Temporal Reality Model of Dooyeweerd (Dooyeweerd, 1955). Flowing from this, the researcher aims to reason that teacher competencies should be moulded to fit learner needs. She then proceeds to discuss the following important topics with regard to teacher competencies: eye conditions, the effect

of eye conditions on development, Braille, the ECC (with special reference to social skills, and orientation and mobility) and inclusive education.

2.2   Conceptual framework

Sefotho (2015) maintains that metatheory should be "used as a platform to develop a conceptual framework that addresses the phenomenon you are researching …" (Sefotho, 2015, p. 33). Because of the wide scope of this study, it not only needs a "platform", but also a "roof". The "roof" serves as the metaphor for an over-arching ideal – that of accessibility for all people with impairments. The universal design for learning principles (Rose & Meyer, 2002) is ideally suited to act as the "roof" for the study, as it addresses the need for accessibility. McGuire, Scott and Shaw (2006) are of the opinion that universal design can offer access to an increasingly diverse college student population. It is therefore becoming part of the public dialogue about inclusive educational practices.

The critical realism paradigm will serve as the "platform" for the development of this study's conceptual framework. The study is about the day-to-day classroom realities, the real-life needs of learners and the competencies teachers need to address these needs. Williams (1999) refers to the debates regarding illness and disability, and feels that critical realism enables one to "bring the body back in" (Williams, 1999, p. 798). In other words, one needs to take an honest look at exactly what visual impairment entails, and what the needs of visually impaired learners are. To bring the "platform" and its "roof" together, a conceptual framework is required that can combine the different theories.

To combine the theory of universal design and teacher competencies (based on critical realism), the researcher chose the circle graph of Van Deventer and Kruger (2014), which depicts the management process, as a template (Van Deventer & Kruger, 2014). The conceptual framework consists of four concentric circles. The outer circles represent the universal design principles, which will be used for the course design. The inner circle represents the values, knowledge and skills that will be taught to the student teachers (Chong & Cheah, 2009). These competencies will be based on the real-life needs of learners with visual impairments. The innermost circle represents values, because being value-driven is particularly important when teaching learners with disabilities.
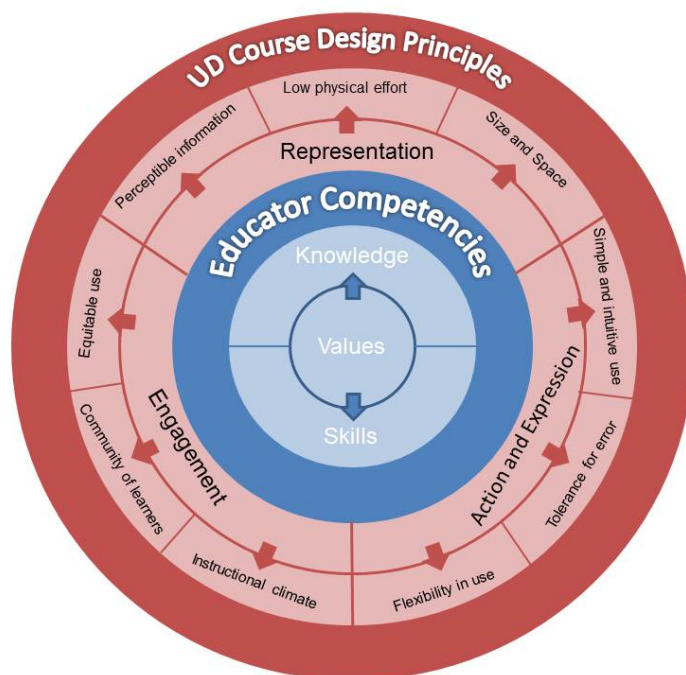
Figure 2.1: A circle graph illustration on the development of educators who teach learners with disabilities (based on Van Deventer & Kruger, 2014, p. 73)

The concept of universal design originated in the field of architecture. Ronald Mace, an architect and wheelchair user, proposed that physical environments should be proactively designed to meet the needs of broadly diverse individuals, for example young people, the elderly and individuals with temporary and permanent disabilities (McGuire et al., 2006). The notion of universal design has evolved to such an extent that examples are visible everywhere in our environment. For example, television captioning is helpful for the deaf, but also for exercisers in health clubs or travellers at airports (Rose & Meyer, 2002). Rose and Meyer (2002) were the first researchers to use universal design in education. Using the universal design for learning framework, they envisaged curriculum designers anticipating and reducing or eliminating barriers by making curricula flexible (Rose & Meyer, 2002).

Universal design principles can and should also be considered to make university lectures accessible to a wider audience with diverse needs. For example, in their study, Smith and Buchannan (2012) report on a course design that aimed to create sustainable, equitable and just learning environments at Western Illinois University. PowerPoint slides were evaluated to ensure that they were accessible with screen reader software. Lectures were recorded and made into podcasts that were placed on the server in multiple formats. Videos were evaluated for captions (Smith & Buchannan, 2012). The use of the strategies that conform to universal design principles in the envisaged advanced diploma in visual impairment studies will encompass "practise what you preach". It is possible that teachers who have visual

impairments (or other challenges) may attend the course, and if it is not accessible to them, it will be extremely ironic.

Spungin and Ferrel (2007), the 1994 ICEVI Conference in Europe, as well as the Texas Examinations of Educator Standards Programme (Texas Education Agency, 2013) provide comprehensive lists of competencies for teachers of the visually impaired. Out of these, the researcher has listed the competencies that were most prevalent in all three sources and classified them into knowledge and skills categories (Chong & Cheah, 2009). This resulted in the identification of the following competencies:

Knowledge
- The human visual system, diseases, disorders and educational implications
- The implications of visual impairments for students' growth and development
- The effects of additional disabilities
- Knowledge of appropriate teaching strategies
- Knowledge of Braille and the Nemesis Code
- Content knowledge of academic curricula and the ECC
- Knowledge laws, policies and concepts applicable to disability

Skills
- The ability to conduct and interpret assessments
- The ability to recommend appropriate reading and writing media
- The ability to use these media and other assistive devices and teach learners to use them
- The ability to identify individual goals and objectives in academic areas to create an individualised education programme or individual support plan according to South Africa's Screening, Identification, Assessment and Support (SIAS) Policy
- The ability to identify goals and objectives in ECC areas
- The ability to adapt materials, activities and classroom organisation where needed

The inner circle or core of the concentric circles of the circle graph on the development of educators who teach learners with disabilities (see Figure 2.1) represents values. According to Chong and Cheah (2009), values, beliefs and attitudes are critical for teachers to be effective. They include respect for all learners and their diverse capabilities, confidence in their abilities to learn, commitment and dedication to the profession, and a desire for ongoing learning and excellence (Chong & Cheah, 2009). As appropriate values are the driving force

behind all teacher competencies, the researcher will start the rest of her discussion with an important aspect of this core competency: the way teachers view a learner with disabilities (for this study, specifically the disability of visual impairment). Do they pity the learner? Do they find it difficult to look past the disability? Do they have confidence in the learners' abilities? Are they willing to go the extra mile in terms of instructional design and classroom adaptations? Or do they ignore the visually impaired child in their class, thinking that he should "learn to cope", like everyone else? To address this, the researcher will focus on several disability models.

2.3   Disability models

Disability models refer to frameworks for understanding people with disabilities, or put differently, different models of disability represent different views on the impact of disability on wellbeing (Altman, 2001). The prevalent discourse on disability at a given moment in society influences the view that teachers have on the learner with a disability and will also influence their mindset when teaching.

2.3.1   The medical model

The medical model of disability assumes that impairment arises from symptoms due to a sensory, neurological or cognitive medical condition, which is subsequently categorised and classified (Bricout, Porterfield, Tracey & Howard, 2004). The medical model is usually seen as dehumanising because of the perception that people with disabilities are merely sick and that their opinions do not matter. This results in attitudes that isolate them and condemn them to perpetual dependency (Gauteng Provincial Government, 2010). When adhering to this model, the teacher struggles to see beyond the "blindness", may act out of pity and may not be able to believe that the child is able to transcend his or her blindness to become a worthy member of society. Donohue and Bornman (2015) observed this tendency in their study in South Africa, where teachers indicated that children with disabilities were mainly there to "be loved and cared for".

2.3.2 The social model

The social model of disability sees disability as a social construction. Society creates "disability" by imposing hindrances to the full participation of persons with disabilities (Bricout et al., 2004). For example, a person in a wheelchair is disabled when there is no ramp at the entrance of a building or when there is no accessible bathroom. A blind person is disabled when he has to work on a computer with no screen-reading software (WHO, 2011). Although the social model of disability triggered a much-needed paradigm shift and worldwide legislation and policy changes, the model itself lacks balance. It has caused policy makers

and academics to theorise about inclusion and equality in such a way that the reality of the individual's impairment was negated.

2.3.3 The transactional model

The transactional model focuses on interactions between the parent and child, and between the child and his or her environment. It stresses "reciprocal relations" using techniques such as role-playing, social stories, applied behaviour analysis (ABA) and Lovaas therapy (Bricout et al., 2004). Arnold Sameroff, the father of this model, maintained that development is dynamic and influenced by the mutual interaction between the individual and his or her environment (Sameroff, 2009). This model encompasses a lot of truth. Numerous studies have shown that students with visual impairments have significant challenges with regard to social skills (Wolffe, 2013; Kaine & Kent, 2013). Students in a study by De Verdier (2016) reported feelings of loneliness and psychosomatic symptoms, such as headaches, stomach aches and body tension because of social and academic pressure.

2.3.4 The ecological or systems theory

In order to arrive at a model that accommodates the elements of all three models – the individual (medical model), the societal (social model) and the transpersonal (transactional model), an ecological approach is required. (Bricout et al., 2004) The ecological or systems theory of Bronfenbrenner (1992) conceptualises the child's environment in concentric circles of influence, from its most proximal (or closest) relationship with the individual, to its most distal, and in between. The model starts with the microsystem (family) closest to the child. It then describes the mesosystem (direct relationships such as neighbours), followed by the exosystem (indirect relationships such as school systems). Finally, it describes the most distal structure, the macrosystem (cultural influences). The ecological or systems model of disability puts the child in the context of an environment that can produce developmental changes (Llewellyn & Hogan, 2000).

2.3.5 The disability identity model

All the models described thus far neglect the individual in the centre of the concentric circles illustrated in Table 2.1: the human being who has to live with a disability or disabilities. Identity is an elusive construct, as it is highly personal and intrinsic (Forber-Pratt & Zape, 2016). Identity development is a challenge for a child with a disability. The Disability Identity Model of Gibson (2006) consists of three stages: passive awareness, realisation and acceptance. During the first stage, "passive awareness", the child receives treatment for medical issues. The second stage, "realisation" begins around adolescence. The individual starts to see him or herself as a person with a disability, and experiences emotions such as

self-hate and anger. He or she is concerned about his or her appearance and about how others perceive him or her. (Gibson, 2006). Finally, in adulthood, the person reaches the "acceptance" stage. The focus shifts from feelings of "being different" in a negative way to embracing the self. The person is now ready to integrate himself or herself into the "able-bodied" world (Gibson, 2006).

2.3.6 The holistically enabling model (based on Dooyeweerd's Aspects of Temporal Reality)

Each of the models discussed above is based on a reduction of an aspect of reality. The medical model is based on the physical aspect. The social, transactional and ecological models are based on the social aspect. The identity model is based on the formative aspect, which refers to cognition. As the researcher has a critical realistic ontology, she views the human being, which includes people with disabilities, in a more holistic way. Therefore, she bases her own model, the "holistically enabling model", on the work of Dooyeweerd (1955).

Dooyeweerd (1955) identified 15 aspects of temporal reality, which are also applicable to human beings who are part of reality. These aspects are seen in a specific order. The first three (the quantitative, spatial and kinematic aspects) are mathematical aspects and are pre-physical. The next three (the physical, biotic and psychic-sensitive aspects_ are pre-human aspects, in that they govern material, plants and animals, although they also apply to humans. The next three (the analytical, formative and lingual aspects) govern individual human cognition. The following three (the social, economic and aesthetic aspects) are aspects of our living together. The final three aspects (the juridical, ethical and pistic or faith aspects) are especially important in the health of society (Basden, 2011). Applied to a human being, the diagram in Figure 2.2 may help to create a more holistic view of the human being and the reality in which he or she lives.

The holistically enabling model
(based on Herman Dooyeweerd's philosophy)

Pistic/Faith
Ethical
Juridical
Aesthetic
Economic
Social
Lingual
Formative
Analytical
Psychic-sensitive
Biotic
Physical
Kinematic
Spatial
Quantitative
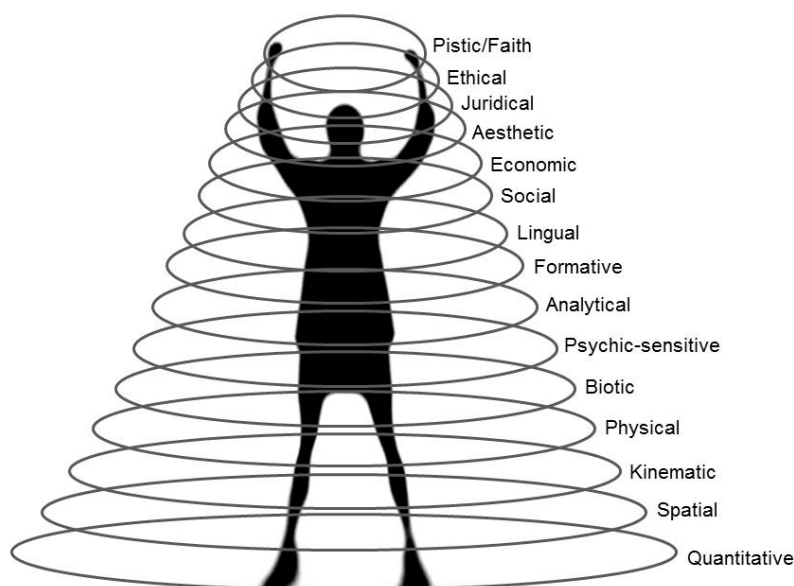
Figure 2.2: The holistically enabling model (based on Dooyeweerd, 1955)

A child who is visually impaired has one aspect – the physical (the eye) – that is not functioning as it should. It must be emphasised that this does not make the visually impaired person less human than anybody else – just different. Vehmas and Watson (2014) criticise critical disability studies, emphasising that a person with a disability has real needs that cannot be overlooked in the quest for social justice: "There are real needs and [they] represent real differences. Without an acceptance of these differences, it is hard to see how we could move forward." (Vehmas & Watson, p. 647). Visual impairment, which affects the physical aspect of human beings, causes a number of other needs in other aspects to arise as well. For example, their motor development, perceptual development, cognitive development, language development and social skills are affected. If they are unable to obtain employment after school, they will be economically affected as well. Each learner has his or her individual needs, but, as a group, visually impaired learners have some corresponding needs, which have been well researched and will be discussed later in this literature review.

Teachers need to mould their education according to their learners' diverse needs. Only by viewing learners' needs in a holistic way and meeting their needs, will teachers successfully enable them to develop into fully functioning human beings. Therefore, teacher competencies, as envisaged in the proposed advanced diploma in visual impairment studies, should be based on the needs of visually impaired learners. If the learner is viewed in a

holistic way, it will help to create a holistically trained teacher, who will be better equipped to enable the learner.

Figure 2.3: Moulding teacher competencies to learner needs

To take this discussion towards the kind of information one needs to create the modules for the proposed advanced diploma, one needs to keep in mind that learners' needs and teachers' competencies go hand in hand. These needs will be physical, cognitive, language related, and social, which are again linked to independence. Due to space constraints, the researcher had to choose some needs (and corresponding teacher competencies) to focus on in her literature review. These are eye conditions, additional disabilities, the effect of eye conditions on development, Braille and the ECC (with special attention to social skills, and orientation and mobility). She concludes this chapter by discussing inclusive education, where all these competencies need to come together.

2.4   Learner needs and teacher competencies

2.4.1 Eye conditions

Blindness and low vision are some of the major public health problems worldwide (Berhane et al., 2007). According to the World Health Organization (WHO), 285 million people across the world are visually impaired, 39 million are blind and 246 million have low vision. About 90% of the world's visually impaired population live in low-income settings. Some 80% of all visual impairment can be prevented or cured. An estimated 19 million children worldwide are visually impaired. Some 12 million of these children are visually impaired due to refractive errors, a condition that can easily be diagnosed and corrected, and 1.4 million are irreversibly blind for the rest of their lives (WHO, 2010).

To comprehend eye pathology and the resulting loss of vision, it is important to understand the physiology of the eye. Bowman, Bowman and Dutton (2010) provide a simple and concise description of each part of the eye's physiology and function, starting with the front

of the eye (cornea, lens, iris and pupil), progressing to the inside (fluid of the eye) to the back of the eye (retina and optic nerve).

The causes and prevalence of blindness and low vision in children vary significantly from one region to another, due to the influence of factors such as socio-economic problems in the region. Causes of blindness in children are commonly genetic in origin. These include congenital cataract, congenital nystagmus, Leber's amaurosis, retinitis pigmentosa, Usher's syndrome, albinism, congenital glaucoma, microphthalmos, anophthalmos and aniridia (Oduntan, 2005). In South Africa, the major causes of childhood blindness are nutritional (vitamin A deficiency), infections (measles, rubella, ophthalmia neonatorum) and inherited genetic disorders. Vitamin A deficiency causes xerophtalmia, which may result in permanent blindness because of cornea scarring due to insufficient wetting of the tear film (Bowman et al., 2010). The National Vitamin A Supplementation Policy Guidelines for South Africa (Department of Health, 2012) points out that 63.6% of children aged one to nine years were found to be vitamin A deficient in 1995.

Bowman et al. (2010) mention the educational implications that correspond to each description of the relevant eye condition (see Table 2.2).

Table 2.1: Eye conditions and their educational implications

Eye condition	Educational implications
Clouding of the cornea (for example, due to xerothalmia)	Light scatters as it enters the eye, so it may cause an uncomfortable glare – position lights and windows behind the child; low vision aids or Braille may be needed.
Albinism	Photophobia – position lights and windows behind the child. Poor distance vision – position the child close to the blackboard.
Retinitis pigmentosa	Restricted visual fields – implications for the way in which the learning environment is set up; the child must be able to navigate through the environment. Poor vision in dim lighting, but also poor vision in bright sunlight – problems to adapt from bright to dim illumination. Lighting levels must be adequate and tinted lenses must be used in the summer. low vision aids may be required.
Macular dystrophies	Progressive condition – causes frustration, falling behind and may present with challenging behaviour. Enlarge educational material and use low vision aids.
Cortical visual impairment	Short visual attention span. Visual skills may often seem to vary. Colour vision is better preserved. Represent shapes and letters in colour

Eye condition	Educational implications
	against a highly contrasting and uncluttered background.

2.4.2 The effect of visual impairment on development

It is a well-researched fact that the development of children with visual impairments tends to be delayed in comparison to the development of sighted children. Bishop (1991) points out that blind children may have their "own" set of developmental norms. They may not follow the same sequences of development in the same order at the same time as their sighted peers. What appears to be a delay may be "normal" for a child who is visually impaired (Bishop, 1991).

2.4.2.1 Motor skills

The most noticeable delay is in the development of motor areas (Levtzion-Korach, Tennenbaum, Schnitzer & Ornoy, 2000; Haibach, Wagner & Lieberman, 2014). Visual feedback represents the most important incentive for the development of locomotion and mobility skills (Gori, Cappagli, Tonelli, Baud-Bovy & Finocchietti, 2016). Visually impaired children may not reach motor milestones such as head control, erect posture, reach and locomotion (including rolling, crawling, standing and balancing) when expected (Bishop, 1991). Some blind children may only start walking at 30 to 32 months old (Gori et al., 2016). Because of the absence of vision, children with visual impairments battle with the refinement of movements. Blind children do not reach for objects that produce sounds until the end of their first year, whereas sighted children already reach out at the age of five months (Gori et al., 2016). As a result, grasp patterns may develop more slowly, and by the time the child starts to attend a preschool facility, his or her "school skills", such as block building, pasting, colouring and the use of scissors, may be delayed (Bishop, 1991).

2.4.2.2 Perception

Barlow (1989) points out that perception is a prologue to learning. Learning is based on what we perceive, and the cerebral cortex is the place where the representation of what we have perceived is computed. Vercillo, Burr and Gori (2016) maintain that, in the case of early vision loss, the visual cortex is functionally reorganised in such a way that it is activated by other sensory modalities, for example hearing and touch. Sadato, Alvaro, Grafman and Hallet (1996) published results from magnetic resonance imaging (MRI) scans that prove that the visual cortex of an adult who has been blind from an early age is activated during Braille reading (Sadato et al., 1996).

Since a child with severe visual impairments needs to substitute vision with touch or hearing, one should consider the difference between these ways of perception. Vision is capable of integrating many pieces of information at once (colour, texture, size, shape, position in space and movement). No other sense sends as much information to the brain as quickly as vision (Bishop, 1991). In contrast, tactile experiences occur one at a time, and attention is focused on one primary sound at a time. Therefore, the visually impaired child needs to be provided with as many concrete ("hands-on" and interactive) experiences as possible very early in life. These experiences should also be as varied as possible (Bishop, 1991).

Spatial perception is one modality of perception that children with visual impairments find very challenging. This is the ability to comprehend and internalise the spatial relationships between objects in the environment and one's own body (Gori et al., 2016). Vercillo et al., 2016, and Cappagli, Cocchi and Gori 2015 found that blind children find it difficult to grasp part-whole relationships and that their auditory-spatial abilities are impaired.

2.4.2.3 Cognitive development

Piaget (in Woolfolk, 2004) described the four consecutive stages of cognitive development: sensorimotor, pre-operational, concrete operations and formal operations. Up to two years of age, the child is in the sensorimotor stage. The child experiences his world through the senses and through movement. As we have already established, the absence of vision delays this process considerably (Bishop, 1991; Troster, Wecker & Brambring, 1994; Levtzion-Korach et al., 2000; Haibach et al., 2014; Cappagli et al., 2015; Gori et al., 2016; Vercillo et al., 2016).

Piaget (in Woolfolk, 2004) called the second stage of cognitive development (from two to seven years old) the pre-operational stage, as the child has not yet mastered the ability of mental operations (thinking through actions). Children are egocentric in this stage. The third stage, concrete operations, occurs between the ages of seven to 11 years old. According to Piaget (in Woolfolk, 2004), children at this age learn best through hands-on discovery learning. Three basic reasoning stages, identity (where a person or object remains the same over time), compensation (where one action can cause changes in another) and seriation (where objects are ordered based on certain physical aspects), are acquired during this stage. The child is also able to classify items. The final stage of cognitive development, according to Piaget (in Woolfolk, 2004), is the stage of formal operations (from 11 years of age to adulthood). People in the formal operations stage are able to think abstractly, reason inductively and deductively, use strategies for problem-solving and think hypothetically (Woolfolk, 2004).

Gottesman (1976) found that groups of congenitally blind learners followed the same developmental pattern as sighted learners, except that their rate of development was slower at younger age levels. Bishop (1991) stresses that visually impaired learners *do* construct their world and *do* develop intelligence.

2.4.3 Additional or multiple disabilities

According to Douglas, McCall, McLinden and Pavey (2009), about 50% of visually impaired children up to the age of 16 years have disabilities in addition to their visual impairment. Children with "additional disabilities" (about 18% of the visually impaired population) are those children with sensory, physical or mild-to-moderate learning difficulties. Children diagnosed with multiple disabilities and visual impairment (MDVI) have severe or profound difficulties (accounting for about 30% of the visually impaired population). The term MDVI describes a heterogeneous group of children with a wide range of needs and impairments. They have visual impairment (in varying degrees), but may also have physical and hearing impairments, severe learning difficulties, and speech and language difficulties (Taylor & Preece, 2010).

Goggin and O'Keefe (1991) mention a whole range of chromosomal or genetic disorders in their study, for example Rothmund-Thompson syndrome, Tay-sachs disease, Patau's syndrome, an extra chromosome 15, and a deletion of the short arm of chromosome 11. Children with these disorders have multiple challenges and need education that has been tailored to their unique needs. Various studies have been devoted to the interventions that may facilitate their development, such as tangible symbols (Trief, Cascella & Brue, 2013), an activity-based intervention model (Tellevik & Elmerskog, 2009), applied behaviour analysis (O'Mea, 2013), the use of the Individualised Meaning-centred Approach to Braille Literacy Education (I-M-ABLE) (Schles, 2015), the Treatment and Education of Autistic and Communication-related handicapped CHildren (TEACCH)-structured teaching approach (Taylor & Preece, 2010), the use of technology (Hartmann & Weismer, 2016) and the use of background music to regulate behaviour (Desrochers, Oshlag & Kenelly, 2014).

2.4.4 Appropriate teaching strategies for visually impaired learners

2.4.4.1 The importance of first-hand experience

Wittich and Schuller (1973) argued that perception is the foundation of learning. They stressed the fact that, without a conceptual foundation, learning would be severely impaired (Wittich & Schuller, 1973). The visually impaired learner needs direct sensory experiences in

order to facilitate knowledge construction. Bülbül, Garip and Őzdemir (2015) point out that a lack of visual experience may cause learners with visual impairment to differ from sighted learners in terms of their pre-instructional knowledge and therefore also in terms of the projected learning process (Bülbül et al., 2015). Bishop (1991) maintains that the provision of many and varied concrete "hands-on" and "interactive" experiences will help visually impaired learners to achieve their cognitive potential (Bishop, 1991).

2.4.4.2 Learner-centeredness – curriculum adaptation according to learner needs

According to the SIAS policy, the centre of instruction is the learner. The creation of an individual support plan for each learner with barriers to learning is advocated in this policy (Department of Basic Education, 2014). The teacher should get to know each individual learner, the educational implications of his or her eye condition (Bowman et al., 2010) and his or her individual needs in terms of supportive technology, seating, appropriate lighting, orientation and mobility, independent living skills, social skills and family support (Pfeiffer, 2010).

Because of the focus on individual learner needs, the teacher needs to adapt the curriculum and accompanying learning materials, such as tactile books and educational wall decorations, the use of Braille labels in the classroom and the use of models, to ensure each learner's maximum participation. "It is essential to offer specific and sequential hands-on, sensory-based lessons to build a broad base of experiences. In higher grades, there are many mathematical, geographical and scientific concepts that must be taught with adapted materials and strategies for students who are unable to learn from pictures and diagrams. A child with little or no vision may have fragmented understandings of the world without systematic tactile exploration and clear, verbal explanations" (Pfeiffer, 2010, p. 8). Fraser and Maguvhe (2008) stress the need for curriculum adaptation in their study, "Teaching Life Sciences to blind and visually impaired learners. According to the authors, any curriculum that is not learner based and learner paced will hamper blind and visually impaired learners in learning and reaching their full potential (Fraser & Maguvhe, 2008).

2.4.4.3 Multiple learning styles or intelligences

Another important strategy is the use of multiple learning styles. Dr Sulaiman Mohammed Al-Balushi (Al-Balushi, 2006) conducted a study aimed at improving curricular activities for blind children. He used Howard Hardner's Theory of Multiple Intelligences to suggest class activities that may enhance these intelligences. Hardner (in Al-Balushi, 2006) classified these intelligences into eight different areas: bodily-kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical, musical, spatial and natural intelligence.

2.4.4.4 Collaborative learning

For children with visual impairments, collaborative learning starts with the closest social circle, the family. This is the most proximal or closest circle of influence according to Bronfenbrenner's ecological or systems model (Bronfenbrenner, 1992). The visually impaired child needs interactive feedback from all social circles in his or her life to develop as a holistically functioning individual. Among other things, Al-Balushi (2006) mentions role play, interviewing others, participating in simulations, working cooperatively and discussing issues as teaching strategies to enhance the child's interpersonal or collaborative learning.

2.4.5 Braille

The importance of literacy is undeniable. It is part of a child's right to receive quality basic education, as referred to in Section 29 of the South African Constitution. In a report compiled by the National Literacy Trust in London, Joe Morrisroe (Morrisroe, 2014, p. 5) writes: "Literacy influences individual capability in all spheres of life. Low literacy makes individuals and communities more vulnerable to inequality, increasing the risk of social exclusion and undermining social mobility".

America developed the National Literary Braille Competency Test (NLBCT) to set a national standard for Braille competency (Library of Congress, 1994). However, shockingly, in her study, Amato (Amato, 2001) reported that teachers who took the Braille Competency Test only had a 25% pass rate. It is clear that teachers should generally demonstrate Braille competency in Braille for grades 1 and 2, both of which are covered in America's NLBCT. Nemeth Braille code, which is necessary for Mathematics and Science, is another imperative, especially for Mathematics and Physical Science teachers. The researcher believes that it is very important for South Africa to develop a national Braille competency standard as well, and that teachers should be required to undergo a standardised, well-researched test to ensure that there is an objective, high standard with which teachers need to comply.

It is of the utmost importance to start with literacy preparation or a pre-Braille programme early. Conolly (2001) gives good guidelines in this regard. She mentions the main areas of preparation such as number concepts and patterns, motor skills (gross motor and fine motor), dexterity and communication skills. She encourages as much exposure to Braille print in everyday life as possible. She recommends the use of textured or sound books, as well as keeping objects associated with a specific routine, such as a visit to Grandma, in a box. Print books should be adapted by placing Braille wording above the print and pasting textured materials over pictures. She furthermore describes a number of practical ways in

which to practise movement from left to right, which is needed in Braille literacy (Conolly, 2001).

With regard to teaching Braille, the researcher found the six stages of reading development described by Chall (1983) helpful. Stage 0 is the pre-reading stage (from six months to six years), where the child still pretends to read and is exposed to materials like pens and books, listens to stories and expands his or her vocabulary. Stage 1 (from 6 to 7 years old or Grade 1 to the beginning of Grade 2) is the stage during which children learn the relation between letters and sounds (in print or Braille) and spoken language. Learners start to read simple texts and may have to "sound out" words (Chall, 1983). Typically, the learner may start with mastery of Grade 1 Braille during this stage. The more advanced reading stages identified by Chall (1983) progress from Stage 2 (confirmation and fluency) through to Stage 3 (reading for learning the new) towards Stage 4 (reading widely from complex and varying materials with different viewpoints), culminating in Stage 5 (wide reading of ever-more difficult materials – college and beyond) (Chall, 1983).

Caton (1991) gives a comprehensive description of the different steps that need to be taken to make an informed decision on the most appropriate medium of literacy for a particular child. The first step is an eye examination by an ophthalmologist or optometrist to obtain a diagnosis, provide clarity on the stability of the child's condition and ensure that all medical care and attention has been provided. Secondly, a low vision assessment by a clinical low vision specialist should take place. A functional vision profile of the child is created, including aspects such as visual acuity (distant, near or intermediate), refraction, contrast sensitivity and visual (central or peripheral). Other aspects in the functional vision profile will be illumination needs, glare sensitivity, colour vision, ocular-motor skills and the optical and non-optical devices the child needs. Thirdly, an educational assessment needs to take place. This involves a cognitive, affective and psychomotor assessment. A classroom assessment and an assessment of the family's situation are done as part of the educational assessment (Caton, 1991).

Making a correct decision with regard to the selection of educational media for the visually impaired child can make a huge difference in his or her life and it should never be taken lightly. Mangold and Mangold (1989) mentions five major elements for proper assessment of functional vision: working distance from the page, portability of reading skills, reading rates and accuracy, visual fatigue and interpretation of assessment results (Mangold & Mangold, 1990).

2.4.6 The Expanded Core Curriculum

Hatlen (1996) was the first person to use the term expanded core curriculum. He defined it as additional areas of learning where "experiences and concepts casually and incidentally learned by sighted students must be systematically and sequentially taught to the visually impaired learner" (Hatlen, 1996, p. 5). One of the participants in the study of Saliminen and Karhula (2014, p. 5) aptly described this acquisition of ECC skills: "It is more challenging than for the sighted, because you have to learn everything step by step. From a young age, the sighted can watch their parents do chores at home. They learn by watching, which is something we cannot do at all, but [we] need to have everything taught to us. It required a lot to find the motivation to learn mobility and to do shopping, cooking, cleaning [and the like]".

According to Sapp and Hatlen (2010), the ECC includes nine areas: compensatory or access skills, career education, independent living skills, orientation and mobility, recreational and leisure skills, self-determination skills, social interaction skills, the use of assistive technology, and sensory efficiency skills. Because social interaction skills are so crucial, the researcher chose this aspect of the ECC to discuss in more detail. She also discussed orientation and mobility to cover one practical skill.

2.4.6.1 Social skills

The importance of social skills in the holistic development of visually impaired learners cannot be over-estimated. Barraga (1983), in Brown, Packer and Passmore (2013), correctly stresses that the ability to build interpersonal relations, learning how to act independently and achieving a sense of responsibility may be far more significant than grades or academic subject matter.

Social skills in infancy

The development of social skills starts as early as in infancy. Bishop (1991) points out that initial maternal bonding may be affected by the baby's impaired vision. Eye contact may not be made and intimate interaction may be lost unless intervention is provided. There is a high risk that parents respond to the child's apparent lack of reaction by decreasing their own interactive behaviour, which will be have a negative effect on the baby's social development (Lang, Hintermair & Sarimski, 2017). However, Metell (2015) points out that interaction and bonding are totally possible if parents use touch and their voices to establish a relationship and attend to body movements and sounds instead of the child's face (Bigelow, 1992, as cited in Metell, 2015).

Gestures and mannerisms

Bishop (1991) points out that, as the child develops, a great number of social gestures may not be learnt because the child lacks vision and does not imitate them spontaneously. Actions such as waving "bye-bye", nodding or shaking the head for "yes" or "no" and facing the speaker have to be specifically taught to the child. Wolffe (2013) recommends that these gestures are taught by means of hand-over-hand facilitation, whereafter they should be practised in a variety of settings. Bishop (1991) warns that negative behaviour such as nose picking, eye poking, thumb sucking and "finger flicking" should be eradicated as soon as possible (Bishop,1991). According to Wolffe (2013), visually impaired children often do not realise that these inappropriate mannerisms are not socially acceptable.

Social rules
Wolffe (2013) points out that the visually impaired child should be expected to follow classroom rules and procedures such as lining up, listening without interruption before asking questions, raising their hand for permission to speak and participating in classroom activities in meaningful ways. These rules are not only important for classroom organisation, but create a foundation for implicit rules in broader society.

Self-sufficiency
Parents need to realise that visually impaired learners' self-esteem will develop positively if they are taught to become more self-sufficient. Learning how to groom and dress, making their own choices and performing age-appropriate chores are skills that facilitate self-sufficiency and a positive self-esteem (Wolffe, 2013).

Teaching social skills in natural settings
Social skills need to be taught in natural school-related environments, for example, games and play activities, cooperative learning activities and supportive extracurricular groups. Social skills should be practised continuously, for example, during snack time, in the cafeteria and on the playground. Learners with visual impairment should be taught how to act in settings such as shopping centres, libraries and the homes of family friends (Wolffe, 2013). Having conversations in all these settings is important. Bishop (1991) points out that conversational skills are often underemphasised. Visually impaired children may find it difficult to initiate, maintain and bring closure to conversations (Bishop, 1991).

Social skills and employability
Kaine and Kent (2013) conducted a study on activities that may enhance the employability of visually impaired individuals. They stress employability skills such as organisational and planning skills, working in a team, interacting appropriately with others and demonstrating a

sense of responsibility. The activities they suggest are aimed at practicing social skills and appropriate behaviour in the workplace, understanding how to be a good team player, learning what jobs exist, experience of the daily routine in a workplace, using independence skills, and orientation and mobility skills in the workplace, and exploring personal goals and ambitions (Kaine & Kent, 2013).

2.4.6.2 Orientation and mobility

The term orientation and mobility can be defined by looking at the two concepts the term encompasses. Orientation takes place when the individual uses sensory information to identify his position in space and to establish his relationship to other significant objects around him. Mobility refers to the process of moving safely, efficiently and gracefully in the environment (Inman, Loge & Cram, 2000; Griffin-Shirley & Lawrence, 2006) Cmar (2015) cites Jacobson (2013), who defines orientation and mobility concisely as follows: "… the concepts, skills and techniques necessary for safe, efficient and graceful travel under all environmental conditions (Cmar, 2015, p. 2).

Ideally, orientation and mobility should be taught by an orientation and mobility instructor, who has completed a specialised training programme in this field (Kircher-Herring, 2015). However, Maghuve, Dzapase and Sabeya (2012) point out that only 100 orientation and mobility instructors were trained in South Africa between 1974 and 2012 (Maghuve et al., 2012). That means that other professionals, such as occupational therapists and teachers, need to familiarise themselves with the basic orientation and mobility skills that learners with visual impairments need to acquire in order to be functional in the community.

The auditory channel supplies information such as the presence of other people, machines or animals in the environment, materials that objects are made of, and estimates or distances in a space (Lahav & Mioduser, 2000). Auditory training can provide a highly sensitive warning, alerting and scanning system, so that obstacles can be detected and avoided and safe movement made possible (Inman et al., 2000). Sounds, smells, temperature and vibrations may all be employed to establish, maintain or regain orientation (Griffin-Shirley & Lawrence, 2006).

Orientation and mobility instruction usually starts with the utilisation of sighted guides or instructors, who teach the individual spatial identification techniques. This include sensory environment training (Inman et al., 2000). However, there have been various studies about the use of supplementary aids in orientation and mobility training. Espinosa, Ungar and Ochaíta, Blades and Spencer (1998) conducted a study to determine whether tactile maps

would aid direct experience with regard to orientation and mobility. Participants who used tactile maps showed more accurate spatial behaviour and more coordinated and integrated spatial schemas than those who did not carry a map or who received a verbal description of the route. Lahav and Mioduser (2000) conducted a study that involved the development of a multi-sensory virtual environment which may enable blind people to learn about real-life spaces.

According to Griffin-Shirley and Lawrence (2006), the components of an orientation and mobility curriculum should include sensory, concept and motor development (fine and gross motor skills), environmental and community awareness, formal orientation and mobility skills, safety issues, the use of assistive technology and purposeful and self-initiated movement (Griffin-Shirley & Lawrence, 2006). With regard to community instruction, Griffin-Shirley and Lawrence (2006) point out that instruction should focus on independent living activities, such as shopping for groceries and clothing, banking, mailing packages, eating at a restaurant, or travelling on a subway to a job site (Griffin-Shirley & Lawrence, 2006).

The Texas School for the Blind and Visually Impaired has developed an orientation and mobility curriculum called Teaching Age-appropriate Purposeful Skills (TAPS). This curriculum includes evaluation and assessment methods for functional mobility tasks, auditory discrimination abilities, sound localisation, and tracking and orientation in various environments (Inman et al., 2000). Because orientation and mobility skills are so vital, learners need a lot of support to gain confidence. Professionals need to supply ample community experience, positive role models and verbal encouragement to get them there (Cmar, 2015).

Although the researcher could not discuss all the aspects of the ECC, all these skills are vital for the holistic development (and enablement) of the visually impaired learner. Even in an inclusive setting, this fact cannot be ignored. The last aspect the researcher discusses in this literature review is the concept of inclusion.

2.5 Inclusion

Donohue and Bornman (2015) see an inclusive education system as one system of schooling for all learners, regardless of disabilities or other barriers to learning. Learners with disabilities are taught in the same class as their typically developing peers, with appropriate support to facilitate their education (Donohue & Bornman, 2015). Navarro, Zervas, Fabregat and Sampson (2016) stress that equal opportunities to access learning resources, services and experiences should be created in an inclusive setting.

Charley (2015) distinguishes between two types of inclusion: full inclusion and partial inclusion. Full inclusion means that learners with different levels of ability and disability receive all instruction in a regular education class. Partial inclusion means that students with challenges receive part of their instruction in the regular education setting and some instruction in a resource room, where a special education teacher is responsible for specialised instruction according to their needs (Charley, 2015).

The concept of inclusion originated in 1805 when an Austrian educator, Johann Wilhelm Klein, proposed that the solution to the problem with regard to the education of blind children was to place them in local public schools. In 1900, parents of visually impaired children in Chicago demanded to have their children taught closer to home rather than send them far away to residential facilities. Then, from 1975 onwards, a wave of reforms started with the passage of the Education for All Handicapped Children Act (EAHCA), Public Law 94-142. This legislation focused on the education of children with disabilities in general education settings, while providing them with appropriate support services. In 1997, the Individuals with Disabilities Education Act (IDEA), Public Law 101-476, followed and the No Child Left Behind Act was enacted in 2001 (Charley, 2015).

The movement towards the inclusion of learners with special needs was strongly endorsed by the United Nations' Article 24 of the UNCRPD (Kurniawati, 2014). In South Africa, the worldwide movement towards inclusion led to the publishing of Education White Paper 6 in 2001 (Donohue & Bornman, 2015).

A lot has been written about the positive aspects of inclusion. Firstly, the disabilities rights issue concerned with the reduction of inequalities is addressed by inclusion. According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (UNESCO, 2005, p. 12), inclusion is seen as a human right: "At the core of inclusive education is the human right to education, pronounced in the Universal Declaration of Human Rights in 1948". Increased academic motivation and self-esteem have been reported (Ajuwon, Sarraj, Griffin-Shirley, Lechtenberker & Zhou, 2015), which leads to improved student outcomes (Charley, 2015) and the increased competence of all people, regardless of their abilities (Navarro et al., 2015). Students are said to benefit from peer tutoring (McDuffie, Mastropiere & Scriggs (2009), as cited by Charley, 2015). Many researchers mention the increased opportunities for students to develop social skills (Charley, 2015). Students interact with their peers through simple physical proximity and modelling (Ajuwon, Sarraj, Griffin-Shirley, Lechtenberker & Zhou, 2015). All these improved skills and competencies may lead to

increased innovation and productivity, and subsequently to long-term economic viability (Navarro et al., 2015).

However, some studies have found that numerous negative aspects arise from inclusion. Generally, teachers in general education classrooms are saddled with large, diverse case loads. Poor teacher preparation, lack of experience, poor support and negative teacher attitudes can negatively affect academic outcomes (Ajuwon et al., 2015). The most negative learner experiences were those of the learners who participated in a Kenyan study (Agesa, 2014). All of the interviewees reported that the classes were congested and that inconsistency in classroom arrangement made orientation and mobility problematic. Some 92% of the respondents acknowledged that they lacked Braille papers, while 50% said they did not have access to low vision materials. Sometimes, their overburdened teachers ignored them (Agesa, 2014).

Inclusion may lead to social isolation. Estell et al. (2009), as cited in Charley (2015), found that students with disabilities most often made friends with other students with disabilities. Only 42% of these friendships were sustained over a two-year period. Because of a lack of teacher training and support, learners may have limited opportunities to become competent in the ECC, which is vital for future independence (Charley, 2015).

Brown et al. (2013) report that the provision of specialised low vision aids and equipment was poor in the schools where they conducted their research. Gray (2009) confirmed that almost half of the respondents (48%) said that their school was under-resourced. Kurniawati (2014) mentions five challenges that are experienced in Indonesia. These challenges include a lack of government commitment to the implementation of inclusive education, teachers' limited understanding of inclusive education, teachers' inability to educate students with special educational needs (SEN), the inaccessibility of inclusive schools due to geographical barriers, and low awareness among parents of students with SEN of their entitlement to the educational services that are available (Kurniawati, 2014).

According to Charley (2015), teacher attitude is an important predictor of teachers' effectiveness in facilitating the integration of students with disabilities. When inclusive strategies are not implemented effectively because of negative teacher attitudes, students will not receive appropriate support to reach their fullest potential. Ajuwon et al. (2015) agree with this by stating that if teachers' perceptions of children with disabilities are negative, including these children in public school classrooms may not translate into positive experiences for them (Ajuwon et al., 2015).

Donohue and Bornman (2015) conducted a South African study. According to them, factors that influence teachers' attitudes are age, education and training. They cite a study by Hay, Smit and Paulsen (2001), which was a large study of 2 577 South African primary school teachers. Only 36% of these teachers could even describe what inclusive education was. Donohue and Bornman (2015) express concern over the charitable type of humanism displayed by teachers. The majority of teachers in the studies they mention thought that social and peer acceptance were the main benefits of inclusion. Children with disabilities were mainly there to be loved and cared for, while they had low academic expectations of them. They point out that the implementation of inclusion in South Africa is problematic because of a lack of support provided to teachers (Donohue & Bornman, 2015).

In Europe, the implementation of inclusion is in a far more advanced state. In 2009, Gray (2009) had already reported that, of the 24 000 children and young people aged up to 16 years of age with visual impairment in the UK, approximately 57% attended mainstream primary and 47% attended mainstream secondary schools (Gray, 2009). In the introduction to his study, De Verdier (2016) explains that all Swedish students with visual impairment and no additional severe disabilities have attended inclusive education since the mid-1980s. Support measures in these countries are excellent. In Australia (as is the case in most Western countries), itinerant teachers of the visually impaired, occupational therapists, speech pathologists and orientation and mobility instructors provide support to regular classroom teachers and students. The student may also qualify for an education assistant in the class (Brown et al., 2013).

Yet, even in these schools, the challenges for learners with visual impairments in inclusive classrooms are very real. De Verdier (2016) conducted a longitudinal study to examine the psychological wellbeing and social relations in a Swedish general education setting for six students with blindness or severe visual impairment. He reports that students struggled with their identities as visually impaired persons in a sighted environment. The two partially sighted students abandoned Braille reading at different points, mainly because they wanted to read "normally", like their classmates. One of them also refused to use the white cane, even though it was very difficult and frustrating to navigate in the school environment without it. Four students reported feelings of loneliness and psychosomatic symptoms, such as headaches, stomach aches and body tension, because of the stress of trying to keep up with schoolwork (De Verdier, 2016).

All the research that the researcher has read stresses the need for appropriate training. No study, not even studies conducted in Western countries, stated that the teachers who had

participated in their research had adequate training. Charley (2015) reported that one teacher said that college did not prepare her in any way. Allday, Neilsen-Gatti and Hudson (2013) point out that 67% of the teachers in their study were not familiar with the characteristics of various types of disabilities or their responsibilities with regard to the individualised education programme process, referrals or intervention strategies (Allday et al., 2013). Donahue and Bornman (2015) are of the opinion that the only way that teachers can become self-confident and self-efficacious about their abilities to include learners with disabilities in their classes, is by means of appropriate training, experience and exposure (Donahue & Bornman, 2015).

Although the concept of inclusion is meant to address the rights of learners with disabilities to be included in society and to enjoy the same opportunities as their typically developing peers, the reality is that their constitutional right to education is often infringed on in inclusive settings. As long as teachers are not appropriately trained, overburdened with unrealistic expectations regarding the inclusion of learners with disabilities in overcrowded classes and have little or no support, they cannot be expected to display positive attitudes towards the concept of inclusive education. In addition, a lack of specialised aids, equipment and support from specialists are unfortunate realities in South Africa. In a country where many schools do not even have running water, proper toilets and children sit uncomfortably on the frames of old broken chairs, it is obvious that the financial means to make full inclusion work are not yet available. Once again, as previously mentioned, one can see that good policies do not guarantee effective implementation.

2.6   Conclusion

To alleviate the problems regarding so-called "policy evaporation" (Dube 2005) and curriculum implementation, teacher development is a crucial factor. Central to the success of the training and development of teachers of the visually impaired is a holistic view of the learner's needs, as depicted in the Holistically Enabling Model. Teachers have to be equipped with the necessary competencies to meet these diverse needs. In this study, participants will be given the opportunity to collaborate with the development of an advanced diploma in visual impairment studies that will equip teachers with the appropriate competencies (knowledge, skills and values) for the needs of visually impaired learners. The presenters of the diploma need to be familiar with universal design principles in order to promote accessibility. The diploma needs to speak to the realities of South African classrooms. It will be created in South Africa, by South Africans, for South African visually impaired learners, but it will be based on sound research.

CHAPTER 3 METHODOLOGY AND RESEARCH DESIGN

It's a simple idea: We all do better when we work together and invest in our future.

(Senator Elizabeth Warren)

3.1 Introduction

This study was conducted in the South African visually impaired community for the benefit of South African visually impaired children and their future. The purpose of the study was to identify the core competencies (knowledge, skills and values) needed to equip teachers of the visually impaired in the South African context for their task. These competencies had to be based on the needs and challenges of visually impaired learners. The ultimate aim was to let this data feed into a project on visual impairment studies. The project will result in the creation of an advanced diploma in visual impairment studies (see p. 4).

3.2 Qualitative research

This study is a qualitative research project. Nkwi, Nyamongo and Ryan (2001, p. 1) offer a simple and functional definition of qualitative research: "Qualitative research involves any research that uses data that does not indicate ordinal values". This study does not entail numerical data. It involves the voices of a marginalised group of society: visually impaired people. Their experiences and opinions will be utilised to identify the objective realities of their world in terms of a whole range of learner needs, as well as teacher competencies that, in their opinion, will address these needs. However, as Miles and Huberman (1994) note, a well-told story can still be wrong. The results of this study will be utilised in the development of an advanced diploma for visually impaired teachers, so the researcher cannot afford to be wrong. As such, the data will be compared with the experiences and opinions of international experts in the field who have already put their data out in the public domain.

3.3 Research design

Mitchell (2013) quotes Vogt (2008), who defines research design as "a plan for collecting evidence that will be used to answer a research question," a plan that should be selected on the basis of how well it addresses the research question (Mitchell, 2013, p. 11). In order to identify the core competencies that are necessary to teach visually impaired learners, it has already been established that a collaborative, practical approach is necessary. Therefore, the research design took the shape of an action research project.

Action research is a process of inquiry conducted by and for those taking the action (Sagor, 2000, p. 2). The results of this study, which is aimed at contributing to the creation of a well-resourced, practical programme outline for teachers of the visually disabled, will ultimately

benefit the participants (teachers and other stakeholders of the visually impaired community). Action research has many benefits as a tool for teacher development. Raubenheimer (2003) concluded that some of these gains are improved skills, amplified motivation to accomplish goals, enhanced collaboration and interpersonal relationships with colleagues and increased teacher credibility.

Action research differs from traditional research in that it does not end with data analysis, but leads to the generation of new questions and new action. It is an iterative process that involves cycles of question generation, planning, action, observation and reflection (Raubenheimer, 2003). The cycles of this action research project will stretch wider than this study towards the scope of the project of which it is part. After this study has been concluded and the course outline finalised, teachers and other stakeholders will be consulted again to reflect on the results, after which a new cycle of renewed collaborative research and action will start. Although this study was part of a larger action research project and thus utilized action research design principles in the data collection phase, the PRA workshops did not yield enough rich data specific to the study, therefore the researcher made the decision to use the interviews as primary data sources.

3.4 Sampling

Palys (2008) maintains that purposive sampling is a series of strategic choices that provide direction in terms of with whom, where and why a researcher conducts research. This statement implies that purposive sampling should be closely connected to the research objectives (Palys, 2008). Palys (2008) identifies eight different kinds of purposive sampling. Of these eight, stakeholder sampling, as described by Palys (2008), corresponds closely to what was done in this study. Stakeholder sampling involves identifying the major stakeholders who are involved in designing, giving, receiving or administering the programme or service being developed, or those that will be affected by it (Palys, 2008, p. 697). For the sampling in this study, the researcher had to identify the stakeholders who would be affected by or involved in the development of the advanced diploma into which the study would feed. However, she had to choose her participants in such a way that they would provide the answers to her research questions and assist her to achieve the goals of the study.

The purpose of this study was to identify the competencies needed by teachers of the visually impaired. These competencies had to be based on the needs and challenges of visually impaired learners. The researcher was of the opinion that blind or visually impaired people were the most important stakeholders to interview regarding the needs and

challenges of visually impaired learners. Secondly, she purposely chose parents and practicing teachers and therapists who live and work with visually impaired learners daily, as participants. She therefore interviewed four parents, two school leavers, three blind adults, two occupational therapists and three teachers. Some of the parents and blind participants were interviewed together.

As a member of the project team, the researcher joined the team in some of the participatory reflection and action (PRA) workshops that were conducted at full-service schools and schools for learners with special needs (LSEN) all over the country. The team visited 17 schools in five provinces. They involved 240 teacher participants and around 40 experts in the field. Due to the obligations of the researcher's full-time teaching post, she was unable to accompany the team on all the visits, but all the data was at her disposal for secondary data analysis. Table 3.1 depicts the biographical data of the participants at the PRA workshops at the schools that were visited by the team.

Table 3.1: Participants of the PRA workshops at the different schools

Province	Number of participants per school	Age group					Full-service school	Special needs school
		20–30	31–40	41–50	51–60	61–70		
Limpopo	Harry Oppenheimer (16)		3	10	3		x	
Limpopo	**Siloe** (10)			4	6			x
Free State	Hodisa (9)	5		4			x	
Free State	**Thiboloha** (22)	2	5	8	6	1		x
Free State	Bartemia	N/A	N/A	N/A	N/A	N/A		x
KwaZulu-Natal	Arthur Blaxall (20)		9	7	4			x
KwaZulu-Natal	Ethembeni (8)			4	4			x
KwaZulu-Natal	**Georgedale** (47)	9	11	17	9	1	x	
KwaZulu-Natal	**Okhozini** (10)	3	1	2	3	1	x	
Gauteng	Ema (19)	2	3	5	4			
Gauteng	Bachana Mokwena (24)	3	5	5	4		x	
Gauteng	**Prinshof** (10)		3		5	2		x
Gauteng	**Filadelfia** (7)	1	3	3				x

Province	Number of participants per school	Age group				Full-service school	Special needs school
Eastern Cape	Mthatha JSS (24)	2	2	14	5	x	
Eastern Cape	Efata (13)		2	5	6		x
Eastern Cape	Zamokuhle (5)		1	3	1		x

* The names of the schools that were visited by the researcher are in bold.

The biographical details of the participants that were interviewed are depicted in the beginning of Chapter 4. This was done to ensure that the reader is able to follow the results and discussion in Chapter 4 more effectively.

3.5   Data collection methods

3.5.1   Interviews (primary data collection method)

The researcher used semi-structured interviews for this study. Flick (2011) points out that a number of questions that serve as interview guide are prepared for a semi-structured interview. However, the interviewer can deviate from the sequence of the questions. The interviewees are allowed to answer as freely and as extensively as they wish. The questions serve as a measure to initiate a dialogue between the interviewer and interviewee. The researcher's interviews revolved around the following core questions. The way the questions were put to the participants differed according to their stakeholder position (parent, teacher or therapist):

- Identify the needs or challenges of visually impaired learners. Think holistically – not only of scholastic needs, but also of social, psychological, physical and communicative needs. (The researcher prompted the participants to elaborate on the different aspects of learner needs as the interview progressed.)
- What knowledge, skills and values should a teacher of the visually impaired have? (Each issue was discussed separately.)

The interviewees elaborated extensively on the questions. Deep-seated frustrations came to the fore, especially in the case of blind participants and their parents. The researcher used the questions to provide some structure to the interviews, but allowed the participants to express views that were not necessarily related to the questions.

3.5.3 Participatory, reflection and action workshops (secondary data)

A PRA approach was followed during workshops at the various schools. This approach is in line with the action research design of the study. Although most of the participants reported that they experienced the PRA workshops in a positive manner, some challenges were observed. Teachers were sometimes tired, in a hurry to get back to class (or home, when the workshop was conducted after school) and were not maximally inclined to think creatively. They sometimes found it challenging to verbalise their experiences and often needed prompts to get their thoughts going. In the researcher's opinion, another challenge of the PRA method is that the richness of the data is compromised. Participants would have a discussion about a topic and then summarise their thoughts in one cryptic phrase on the poster. These cryptic phrases did not reflect all the contributions of all the participants accurately.

3.6 Data collection instruments

A basic questionnaire was drawn up for use during the semi-structured interviews. Cryptic notes were made on the questionnaires. However, the interviews were recorded and transcripts were made of the interviews shortly after they had been conducted.

During the PRA sessions, posters were used with open-ended questions on written on them. The data on the posters was transcribed by a data typist. Teachers' feedback sessions were recorded. A data typist transcribed these recordings. Comprehensive field notes were typed shortly after each school visit. Photographs were taken on some sites.

3.7 Data analysis

Dey (1993) likens qualitative data analysis to making an omelette. You cannot make an omelette without breaking the eggs and mixing them together. Similarly, analysis involves the "breaking down" of data and "mixing" the bits together. As in the case of an omelette, the product is vastly different from that with which one started. Marshall and Rossman (1989, p. 150) suggest that data analysis is the process of "bringing order, structure and interpretation to the mass of collected data."

Miles and Huberman (1994) suggest that there are different levels of thematic data analysis. The first stage is open coding, where codes are assigned to different data snippets. Sets of codes are synthesised, and then re-tabulated into one set of codes. These codes are then organised under category headings. The second stage involves the systematic linking of all the items or categories produced in the first stage. The categories are put back together, but

in conceptually different ways. Themes or "super-categories" will start to emerge. The third stage moves from the level of description to the level of explanation.

For this study, the researcher chose to use applied thematic analysis (ATA) of Guest, MacQueen and Namey (2011, p. 12). In their introduction, the authors explain that ATA is suited to answering research questions of a more practical nature, which is exactly what this study attempted to do. ATA shares "the systematic, yet flexible and inductive" nature of grounded theory. The approach borrows useful techniques from different theoretical and methodological camps and adapts them to an applied research context. ATA is well suited for large data sets (Guest et al., p. 17). Because the study was part of a larger project, the data set was unusually large. ATA is also good for team research (Guest et al., p. 17). A lot of the data collection was done in a team.

A more detailed description of how the data analysis was handled in this study follows in Chapter 4.

3.8   Rigour in the study

3.8.1 Credibility
In this study, the researcher endeavoured to adhere to the constructs defined by Lincoln and Guba (1985) to ensure trustworthiness. These are credibility, transferability, dependability and confirmability. The first construct, credibility, is also referred to as internal validity. According to Shenton (2004), credibility refers to the truth value of the study. Is it congruent with reality? Do the findings make sense? Are they credible to the people studied and the members of the research community? Shenton (2004) mentions 19 measures that a researcher can undertake to ensure the credibility in a study. Of these, the researcher has singled out the following three aspects:

3.8.2 The development of an early familiarity with the culture of participating organisations
Because visual impairment is not the researcher's field of specialisation, she realised that she had to learn as much as possible about visual impairment. She therefore visited the South African National Council for the Blind (SANCB) and had informal exploratory conversations with some stakeholders. She went for a school tour at an LSEN school for the visually impaired in Pretoria. She read everything about visual impairment that she could find – not only academic material, but also parent blogs, school websites and magazines. This helped her to understand the culture of the visually impaired community before starting her study.

3.8.3   Triangulation

The researcher collected data by means of semi-structured interviews. As part of a project team, she also took part in school visits where PRA workshops were conducted. Using different data collection methods was a measure to ensure that she captured the reality of the experiences of participants. Shenton (2004) views a wide range of informants as another form of triangulation. The researcher felt that she had to triangulate the results of the teacher workshops with the experiences of parents, school leavers and blind adults to ensure that the reality of visual impairment was viewed from more than one angle.

3.8.4 Member-checking

The project leaders organised a stakeholder colloquium during which member-checking was conducted by sharing preliminary findings and inviting discussion about the project with stakeholders. After data analysis, the findings were shared and discussed with various participants in the different provinces. With regard to her specific study, the researcher compared her findings with those of studies that had already been conducted in other countries. Several reputable authors with considerable experience in the fields of visual impairment and teacher development have published papers about teacher competencies and learner needs (Wolffe et al., 1992; Ravenscroft, 2015; Chong & Cheah, 2009; Spungin & Ferrell, 2007).

3.8.5 Transferability

Miles and Huberman (1994) see transferability or external validity as the extent to which the conclusions of a study are transferable to other contexts. Shenton (2004) maintains that the results of a qualitative study must be understood in the context of the particular characteristics of the organisation or community and, perhaps, the geographical area in which the fieldwork was carried out. He therefore questions the notion of producing transferable results from a single qualitative study.

3.8.6 Dependability

Dependability corresponds with the concept of reliability in positivist studies. For a quantitative study to be reliable, the researcher needs to show that the same results would have been obtained if the same study was conducted in the same context with the same methods and same participants (Shenton, 2004). However, in a qualitative study, the changing nature of phenomena studied by researchers makes it challenging to achieve the same results. Lincoln and Guba (1985) maintain that qualitative researchers should report in detail about the processes in the study to ensure that a future researcher may be able to repeat the work – even though the same results will not be achieved.

3.8.7 Confirmability

Miles and Huberman (1994) define confirmability as relative neutrality and freedom from unacknowledged researcher bias, comparable to objectivity in quantitative studies. These authors believe that a key aspect of confirmability is the extent to which the researcher admits his or her own predispositions. Shenton (2004) points out that steps need to be taken to ensure that the study's findings are the result of the experiences and ideas of the participants, rather than the researcher's preferences. In this study, the researcher found it relatively easy to work free from bias to a great extent, as visual impairment is not her field of specialisation, and she naturally viewed her participants as experts.

3.9   Ethical considerations

3.9.1 Voluntary participation and trust

With regard to the interviewees, the researcher made use of snowball sampling. Using the reference of a person who is known to the participant already establishes trust. The researcher did not experience any trust issues with the interviewees. They were more than willing to share their experiences with her.

3.9.2 Informed consent

Participants have the right to know that they are being researched, the right to be informed of the nature of the research and the right to withdraw at any time (Silverman, 2016). When making appointments for semi-structured interviews, the researcher called the participants to explain what the research was about and to request their participation. Before signing the consent form, the researcher read a letter to them to explain in detail what the research was about. No data collection was done without informed written consent. Blind participants who were unable to sign the consent forms gave oral consent on an audio recording.

For the PRA workshops, principals were informed of the nature and purpose of the project. They were provided with a synopsis of the main aspects and research methodology so that the teachers would be informed about the research before they were requested to sign the consent forms.

3.9.3 Safety in participation

This study did not involve any risk to the participants. However, because the researcher did interview blind participants, she had to be sure that their potential vulnerability was not exploited in any way. She interviewed the adult participants in their own homes, where they were totally at ease and in control of circumstances. She interviewed the school leavers,

who were still young (but above 18 years of age), in their own environment and in the presence of their parents.

3.9.4 Privacy, confidentiality and anonymity

Data that was collected during this study will be kept safe in a locked cabinet. To ensure privacy, confidentiality and anonymity, pseudonyms were used when referring to participants and schools and when reporting the findings.

3.10 Conclusion

In this chapter, the research methodology employed in the study was discussed. A lot was gained from the collaborative way in which the study was conducted. Visiting the schools and getting the know the participants was an enriching experience. In Chapter 4, the researcher will proceed to present the data analysis and discuss the results.

CHAPTER 4 RESULTS AND DISCUSSION

4.1 Introduction

In Chapter 3, the methodology of the study was discussed. Chapter 4 presents the results of the data analysis. To ensure that the reader gets a clear picture of the participants who have been interviewed, a table with the biographical detail of these participants is included here:

Table 4.1: Participants that were interviewed

Participant	Gender	Information about participant
Parent A	Male	Business executive. School Governing Body (SGB) chairman of his son's school.
School leaver A	Male	Born blind. Recently left school and is planning to complete Grade 12 in a computer-based home schooling setup. Son of parent A.
Parent B	Female	Working mother, privileged circumstances. Served in the SGB of her blind son's school.
School leaver B	Male	Born blind and with cerebral palsy. He has been doing well at school. Son of parent B.
Parent C1	Male	Is a teacher at an LSEN school for learners with mental impairments. Father of an adult blind son.
Parent C2	Female	Mother of an adult blind son. A teacher at a school for learners with cerebral palsy.
Adult A	Male	Born blind. He has just completed his studies and is planning to marry soon. He is the son of Parents C1/C2.
Therapist A	Female	Occupational therapist at a school for the visually impaired She is in her early 30s.
Therapist B	Female	Occupational therapist with a lifetime of experience with learners who have special educational needs. She is in her 70s.
Teacher A	Female	Partially sighted. Attended a school for the visually impaired. She teaches at a school for the visually impaired.
Teacher B	Male	Born blind. Acquired a degree at a university. He teaches home language at a rural school for the visually impaired.
Teacher C	Male	Not visually impaired. Is a head of department at a school for the visually impaired.

Participant	Gender	Information about participant
Adult B	Male	Born partially sighted, became blind as a teenager. He is a switchboard operator, but also a qualified massage therapist.
Adult C	Female	Born partially sighted, became blind as a teenager. She is is a poet and a motivational speaker and has presented independence classes to blind people in the class.

Three main themes have emerged: accessibility, transition and values. The researcher has chosen to depict these themes as three gears that turn each other. Each is vitally important in the education "machine" that needs to produce a holistically enabled individual. Without any of these wheels, the "machine" will not be able to move forward and will be rendered ineffective. Before the discussion of each theme commences, the researcher gives a more detailed version of each "gear" to demonstrate the different categories of each theme. She also shows how the learners' needs and teachers' competencies complement each other.
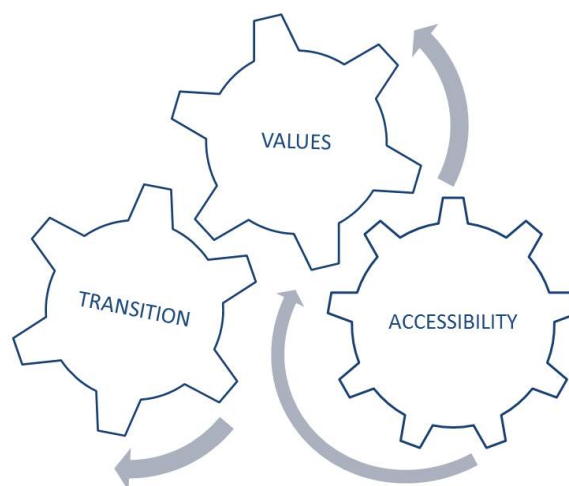
Figure 4.1: Visual representation of themes

4.2 Theme 1: Values
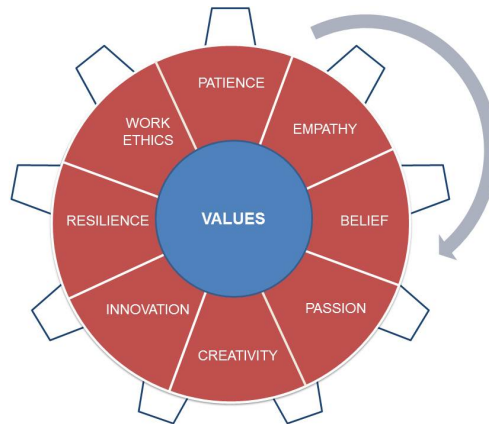
Figure 4.2: Visual representation of Theme 1: Values

The first gear, "values", is where the machine starts turning. Without an inspired teacher, education in the classroom will not go anywhere. Participants had definite ideas about the values that teachers of the visually impaired should have. After analysing the data, the researcher identified eight categories: patience, empathy, belief, passion, creativity, innovation, resilience and work ethics.

4.2.1 Patience

Participants were unanimous about the need for patience. School Leaver B sees a patient teacher as "one that is prepared to explain over and over until the learners understand". For School Leaver A, patience is what makes a teacher a good teacher.

School Leaver A described the following teachers as patient:

> *But in Grade 7 we had a teacher, V, he was very good. He – he was always so calm, he never became angry.* (School Leaver A)

> *But another thing about my economics teacher – she never yelled at me or anything; she just helped me, and she explained to me until I understood.* (School Leaver A)

4.2.2 Empathy

Adult A was met with impatience and a lack of empathy from teachers regarding his white cane:

> *If I do not walk with my cane at school, then they reprimand me because I do not have my cane. If I walk with it, they reprimand me, because I am hitting them with it. Then I decided, not to walk with it; it is more comfortable, anyway. I know the school already.* (Adult A)

The phrase "to put yourself in a blind person's shoes" was used by participants repeatedly: b "A lot of patience, and empathy, you have to be prepared to imagine yourself in the child's shoes" (Therapist A).

> *They must put themselves in the shoes of a blind person. They must give themselves time, just to blindfold and – maybe – just for-for-for-for one hour….* (Teacher A)

Several participants suggested blindfolding sighted people to give them more empathy for blind learners. Adult B is a very independent man. He walks straight-backed and makes good eye contact despite the fact that he cannot see you. He comes across as self-assured and a go-getter. During the interview, when the researcher asked him how one could go about creating more empathy for blind learners in teachers, he seemed to become livid. He stood up, walked out to the veranda, and, with shaking hands, lit a cigarette. Then he turned around and said aggressively:

> *Blindfold them! Let them live as blind people for a day … even a few days! Let them feel how we feel! And they should not be allowed to drive their cars. Ask for a lift! And be refused! And take a bus!* (Adult B)

Therapist A told the researcher that blindfolding *was* used in her school's staff training sessions.

> *We are giving the teachers an experience of how it feels to be blind or have a visual impairment. So, what we do in our training is … we have different aids, we use different sets of glasses that simulate how the different eye conditions work. Then the teachers have to wear the glasses and walk down the passage. They have to – uh – spread a sandwich, just to get that feeling of how it is to live with this disability, and then – the blind children blindfold the teachers and give them different tasks to do, so they get that experience. That helps them to empathise with the learners.* (Therapist A)

4.2.3 Belief

Under the category "belief", to the researcher refers to the teacher's religious belief, as well as having confidence in (or believing in) the learner's ability. School Leaver A's economics teacher is described as an inspired person who is driven by her belief:

> *She is a cancer survivor and she said: "I am going to teach, but I am going to teach at a school for the disabled. That is where the Lord is leading me to."* (Parent A).

The way a teacher views a learner with an impairment or impairments determines how he or she will teach him or her. Parent C1 prefers the term "differently abled":

> *He is just as able as the teacher, he just has – he is differently abled. So, I need to approach him like that… The teacher needs that background in their training.* (Parent CI)

Parent C1 feels that a teacher should not be prejudiced towards a visually impaired learner. Sighted people tend to doubt a visually impaired person's abilities.

> *The sighted world's approach is that a blind person cannot because he cannot see.* (Parent C1)

4.2.4 Passion

Adult A believed that passion is an important value that a teacher of the visually impaired needs:

> *Well, in the first place, he needs to have – uh – a passion for working with people with disabilities – because he is going to have to teach differently. And then he needs to be prepared to support that child more than a normal child.* (Adult A)

4.2.5 Creativity

When asked how teachers in rural schools could overcome the challenges caused by a lack of resources, Teacher C said:

> *One needs to be creative with that. So that he can do what, be able to eh – make his own – things.*(Teacher C)

Making "things" to meet learners' needs requires creativity from the teacher. This teacher's value is best illustrated by photographs taken at one of the schools.

Photo 4.1 Duty chart

Photo 4.2 Braille cell

Photo 4.3 Braille contractions

Photo 4.4 Counting chart

Photo 4.5 Tactile clock

Photo 4.6 Self-made Braille readers

4.2.6 Innovation

Innovation may be described as the ability to think "out of the box" and find new solutions to old problems. From his perspective, Parent A saw one instance where thinking outside the box is needed to solve a practical problem. He described the challenge of blind learners to get to the next period on time, having to carry heavy bags with Braille books up and down staircases.

> *Look, for example, a timetable – it is Grade 12 – the seven subjects all have to be taught every day. Every textbook is 15 cm thick. So, he had these seven terribly heavy books with his homework … So I think … what the school needs to say: We'll organise the timetable like this: Mondays they have Afrikaans and English, Tuesday Mathematics and another subject if they have elective subjects. Something like that, so that they just have fewer books to carry.* (Parent A)

4.2.7 Resilience

Teachers at LSEN schools in South Africa need resilience to survive. Participants shared some instances where teachers cracked under the pressure of an unusual workload:

> *Look, our teachers come and go, and come and go. A new teacher comes, then he has to learn Braille, then they go again and another one comes. Last year, I think we had something like three new Afrikaans teachers who had to learn Braille. Our one Afrikaans teacher's name was E and she got stress attacks. She – one day last year, she came into our class and said she did not feel well. Then she went out of class and just never came back, she resigned.* (School Leaver A)

4.2.8 Work ethics

Therapist A describes the workload of a teacher for the visually impaired as follows:

> *You have to be prepared – it is a lot of extra trouble – where, in a mainstream school you would have prepared one lesson for all the children, you have to prepare this one's work in font 18, this one in bold, and this one yellow on black, and – (laughs) – this one in Braille – uhm – and you will have to adapt textbooks – you will have to be prepared to do all those extra inputs, because it is not – uhm – it goes with curriculum adaptation, everything they give you needs to be adapted.* (Therapist A)

4.3 Theme 2: Accessibility
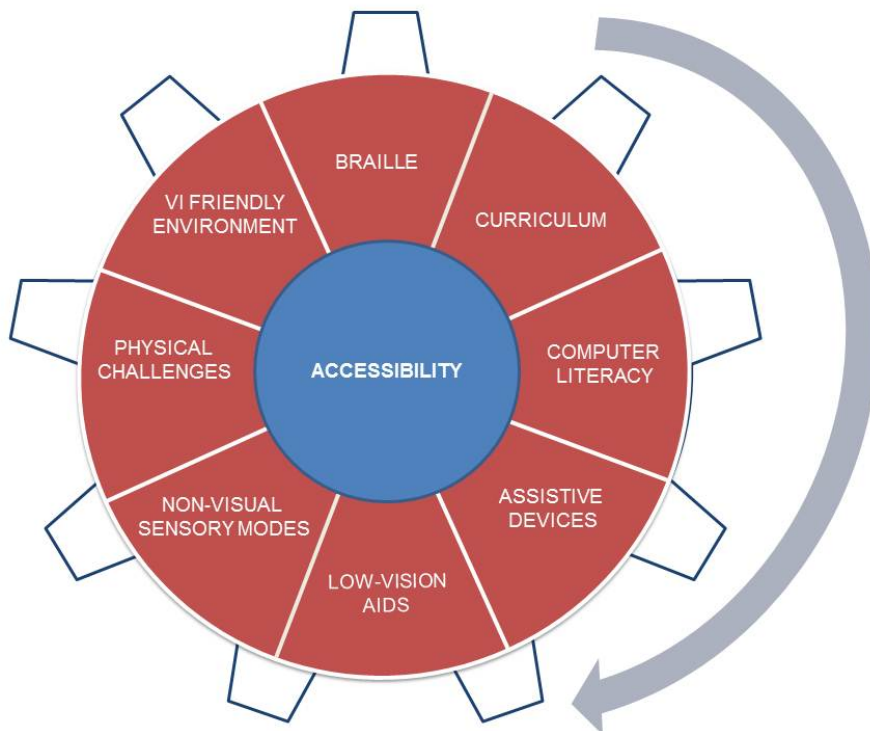
Figure 4.3: Visual representation of Theme 2: Accessibility

The theme accessibility includes all the data that pointed towards the need of the visually impaired learner to access learning and the corresponding teachers' competencies that can enable the learners to successfully access learning. Because Braille came through as a very strong category under this theme, providing access to literacy to blind learners and learners with very low vision, the researcher decided to discuss it first.

4.3.1 Braille

Adult A is a young blind adult who is engaged to be married, very intelligent and independent. He expressed the need of the blind child to have access to literacy by means of Braille as follows:

…personally, I feel it is very important for a child to have a foundation, a medium in which to read and write, so that is why I feel it is important for children to learn Braille in schools. (Adult A)

With regard to the required level of proficiency of Braille, participants agreed that Level 1 and Level 2 Braille was needed to effectively teach blind learners. This is the opinion of Therapist A, who currently works in a school for visually impaired learners.

They will have to be able to read and write Braille. We talk of grades 1 and 2 – but – look, I think a Grade 1 teacher does only Grade 1 Braille, but from Grade 2 they already use contractions.(Therapist A)

Several participants voiced their frustration at teachers currently being unable to read Braille well enough to mark work. School Leaver B reported that a new Mathematics teacher who could not read Braille was appointed at his school. This teacher asked learners to assist him to read tests. These learners made mistakes, which caused the teacher to mark correct work wrong. School Leaver B's marks fell from about 85% to around 50%. School Leaver A, who is very proficient in Braille, is one of the learners who was often asked to read work to teachers. He acknowledges that he does not always follow what other children have written:

What they do is, they usually ask us to help them, but many children's writing is unreadable; so then we cannot always make out what they have written.
(School Leaver A)

Adult 1 described the skills associated with Braille knowledge.

Braille is very important, especially in primary school. Uh – and then I must say, everything going with that – how to handle a Braille machine and to work with it, and then how to type a document so that it can be printed. Because there are many things on a document – you can usually not just type a document – for example tables – they come out very strangely in Braille. So they have to know how to transfer something from a computer into Braille – the format of that. (Adult 1)

4.3.2 Curriculum

Therapist A stressed that some activities that are not appropriate for visually impaired learners need to be adapted to allow blind and low vision learners to access the curriculum.

So, they will have to learn to make those adaptations – how – how can I get the, more or less the same outcome, but with another activity. (Therapist A)

Another example of inappropriate activities for visually impaired learners is that of technology projects. School Leaver A complained:

The Department had a specific syllabus according to which the teachers worked. I do not think it worked too – too well for everyone. We all had to do the same assignment, for example, to build a – a soccer stadium. (School Leaver A)

Parent B and School Leaver B agreed that the curriculum is too full and the subject material too much and too broad. Learners struggle to keep up. Parent C2 pointed out that blind learners in particular need more time to complete written tasks:

…anything, a paper that they type, it takes much longer. Because – I – he needs to read here, with his fingers, and then he needs to come back and type this side, it is not like, "I see what is the next step."… (Parent C2)

With regard to the adaptation to learning material, Adult A refers to the use of illustrations, not only in learning material but even in matric examination papers:

Mathematics and Physical Science too; anything that needs drawings or illustrations. Economics too, sometimes, with graphs – uhm, well it can be done, the technology is once more developing in such a way that you can print drawings in Braille. Uhm – but where the problem came in for us is the matric examination. The school is not allowed to print the question paper, it has to come from the Department. And they sometimes messed up the drawings, so that you have no idea what is going on…. (Adult A)

School Leaver B's wish is that teachers should be trained to present the more difficult and abstract subjects, such as Mathematics and Physical Science, in a more accessible way. According to him, the way these subjects are currently presented makes them inaccessible, especially to blind learners. So blind learners are encouraged to take Braille literacy instead of pure Mathematics.

Something that is very rare and which is almost becoming extinct is Braille Mathematics and Physical Science. So, if you – if this curriculum can train teachers in that – it will be wonderful. (Therapist A)

Visually impaired learners need extra time:

So, they have to know, it takes longer. No matter how intelligent the child is – it takes longer. (Parent C2)

4.3.3 Computer literacy

The three blind adult participants, one parent and two visually impaired teachers, as well as one of the therapists, felt strongly that computer literacy is a must for learners to access literacy and the world of work after school.

> *I do not think Braille is the answer in a school for the blind. I think a laptop is the answer.* (Parent A)

Parent A, whose son had just left school and was faced with the challenge of possible job opportunities, explained his point of view as follows:

> *Let's say they tell W, come and work in the S service centre, he will walk in one day and they will not tell him, listen, here's a Braille machine and things to type, here's an Apex machine, they are going to tell him here's a computer, can you work with a computer?* (Parent A)

Teacher B, who is blind himself, confirmed the need for computer literacy from his own life experience.

> *So, when we get to the university, for the very first time you will see something called a computer. So, you'll struggle a little bit – in terms of their using. But at the class they are running! But then you are struggling to use the computer. You see?* (Teacher B)

Adult A recommended that some of the subjects at school should be computerised to provide the learners with ample exposure to computers.

> *I feel that, in high school, let's say grades 10 to 12, as many subjects as possible should be computerised – uhm – for example, the languages can be done in Braille, and Mathematics. Because to do Mathematics on computer – how is he going to get the picture? So – but the rest of the subjects should be computerised, to provide the children with exposure of how to handle a computer. Uhm – because when you leave school, 99% of the time you do not use Braille. You will use Braille very seldom. Much more attention should be devoted to computers and – uh – computer skills than to continue with Braille. It will help much more.* (Adult A)

4.3.4 Assistive devices

Adult C pointed out that all assistive devices for blind people are extremely expensive.

> *…the computer programmes – JAWS. The problem, once more, those things are outrageously expensive in South Africa. Unaffordable for blind people – ah – it is R20 000 for such a programme. Braille printers, a regular home printer can work very well – R60 000 to buy such a printer. That's ridiculous. So – I can say – that is the problem with all the Braille technology for blind people: It is too expensive. A Braille*

machine these days costs R6 000. Uhm – and it is expected of each Braille learner in the school to have a Braille machine so that he can do homework. Not all parents can afford R6 000. (Adult C)

Adult B believes learners should be taught to be more innovative and creative with regard to assistive devices, as most devices are ridiculously expensive. He himself is constantly thinking of low-tech devices to solve practical everyday problems. Currently, Adult B is working on a pair of glasses with a laser device that blind people can use to detect obstacles above waist level, where the cane and the dog cannot reach.

4.3.5 Low vision aids

Therapist A refers to the different adaptations that are necessary for learners with low vision:

…the size of the font, the contrast – uhm the light – light that is needed in the classroom… (Therapist A)
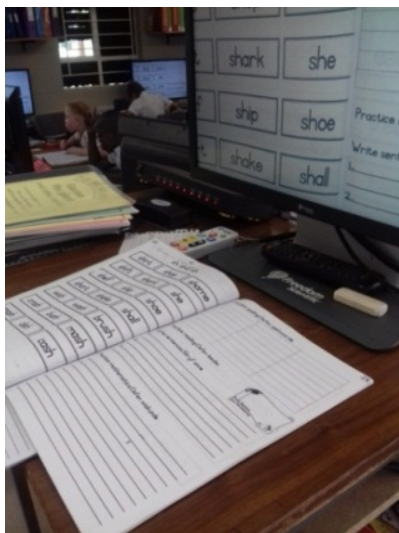

Photo 4.7 Yellow lines for usibility

Photo 4.8 Blinds for light sensitivity

At Therapist A's school, the research team observed cameras with monitors. Learners were sitting in front of their own screen, where the textbook, positioned underneath a camera in the front of the class, appeared in large print.

Photo 4.9 A camera with monitors

Teachers need to know how to use this technology. According to Adult A, even though the technology is available, some teachers do not use it:

> *…at school they have the monitors with cameras – uhm – and many teachers just didn't use it. I think they can just use the technology they already have available.* (Adult A)

4.3.6 Non-visual sensory modes

Some of the interviewees pointed out that teachers often seemed to disregard the needs of blind learners, inadvertently making use of visual aids – which exclude the blind learner and prevent access to learning.

> *I remember our Mathematics teacher, F, he worked on a blackboard. There was a huge blackboard against his classroom wall, then he showed the sighted children how to do a formula… then we could not see it… then we struggled …* (School Leaver A)

School Leaver A pointed out that teachers often referred to colour in classrooms, forgetting that blind learners do not see colour.

> *If he cannot see the colour, I think, a better way is to, I do not know, to cut out the colour, to say, maybe to not go into detail about the colour …* (School Leaver A)

For learners to develop cognitively, they need to develop concept formation. They need to create "pictures" in their minds.

> *…if someone tells you there's a picture of a tree and a road winds around the tree, you cannot see it. So, you make your own picture from the information that you have, of*

what a tree looks like, how the road around it would look. But the picture in your head will not look like the one that the teacher has in her book. So, there is this – this difference between what you see in your head and reality.(Adult C)

Adult C used two examples, a dog and a tree, to explain the use of real objects for concept formation in young children:

You must fetch a real dog, and you have to allow that little one to put his arms around the fat dog – he has to feel that it is thick and round… The same goes for a tree … you need to take that child to a tree. Even if you have to put him on a chair so that he can feel: Here are the leaves. You cannot put your arms around them, it is too fat – too big. But let him try.(Adult C)

Parent C1 suggested that a tactile map, using scale models of mountains, rivers and the ocean, may create a concept of the dimensions of the world around them.

The blind guy does not see a map. Uhm – so, to give the guy something tactile. It is no use I explain to him that the Drakensberg is high – what is high? (Parent C1)

In one of the rural schools the research team visited, they were shown a storeroom with an impressive collection of aids such as talking calculators, 3D shapes, weights and many more.

Photo 4.10 Tactile aids for mathematics

Adult C explained that detailed auditory description should be utilised to assist learners with the "pictures" they create in their minds, as well as with the lesson structure.

But the teacher has to describe what she is doing, for example, she needs to say: "Heading: Number 1. Number 2". Because the others will read the written numbers. (Adult C)

School Leaver B pointed out that teachers needed to progress from the known to the unknown in their explanations. Teacher A agreed with this, using the example of a lesson about frame structures, where a known bookshelf in the classroom can serve as an example of a frame structure.

So you say – you know that bookshelf that we have in class – that is a frame structure. So they know – they've already used that bookshelf and know how it feels and how it is, and now you associate it with that. (Teacher A)

Several participants stressed the role of repetition in the auditory explanation process. Participants invariably used the phrase "explain until they understand".

> *You need tactile aids and good descriptive explanations, over and over, until the learner understands.* (Adult A)

4.3.7 Physical challenges

School Leaver A described some of the physical challenges related to being blind. He explained that carrying his heavy Braille books around proved to be a challenge:

> *My schoolbag was very full; it was so many books, especially this year – my bag broke in April, the handle was totally broken.*(School Leaver A)

School Leaver A's school had staircases, and he described being pushed around by sighted learners because he moved more slowly than they did:

> *…the children push you and then you fall against the railing and then some children fall or you get hurt*. (School Leaver A)

School Leaver B was born at 28 weeks and, because of bleeding on the brain, his right side and both legs were affected by cerebral palsy. He uses a walking frame for mobility. School Leaver B's mother, Parent B, described some of his physical challenges as follows:

> *He has an over-active bladder, so he has to go to the bathroom very regularly. Consequently, he has to leave classes earlier and usually arrives late in class. He has had 14 operations and missed more than four months of school in one year, after which he had to repeat the year. One day, School Leaver B got drenched during a rain shower, having been caught outside on his way to class, unable to move faster to get to shelter. Although School Leaver B is intelligent and does well at school, his work speed is very slow, as the Braille machine requires him to press down hard on the keys, which is challenging for him due to his cerebral palsy. School Leaver B also has a speech impediment. However, he receives speech therapy and has even taken part in recital competitions.* (Parent B)

4.3.8 Visual impairment-friendly environment

Some of the interviewees described challenges with regard to their school environments. School Leaver A complained that his school was revamped during that year and that unexpected and dangerous obstacles were in his way because of that. He said:

> …they revamped our school and then there were fences in the way around which I had to walk… (School Leaver A)

Another obstacle that School Leaver A found a little challenging was low-hanging branches. He complained:

> The school sometimes does not have enough money to cut all their trees, so once I passed underneath a tree and the branch scratched me. (School Leaver A)

School Leaver A's father felt that the staircases at the school proved to be an environmental challenge, especially for learners with physical impairments like cerebral palsy. He describes the plight of School Leaver B, who is a good friend of School Leaver A.

> …he has a backpack because he walks with a walking frame. Steps up, steps down – of course he is going to be late for class … (Parent A)

School Leaver A felt very unsafe in some of the skills classes (Technology), where partially sighted learners were working with dangerous machines, and supervision was not always up to scratch.

> We can get hurt with the machines, because just now the teacher's phone rings or the sighted guy in my class does not know how to handle the machine and then my hand can be caught under the blade and get cut…. (School Leaver A)

Adult B was adamant that furniture arrangement should stay the same. He said that, when a learner enters a room, he should not only be taken to his seat and seated. The layout of the room should be described in detail, such as the furniture arrangement, the door and how many steps to walk towards his seat. After that, the furniture should not be moved and things should not be put in unexpected places: "Everything has a place!" he said sternly.

With regard to lighting in the classroom, Teacher A pointed out that, depending on the learner's eye condition, the teacher should know whether or not he should be seated next to a window. She shared her own experience as a partially sighted person. In her office, the glaring light bothered her, but when she asked the caretaker to replace it, he said that he does not have another one that he can use.

It is still bothering me. And then I said to him – he laughed – I said – why do you not take this yellow plastic and roll it around… (sighs). He said – it is not, eh, it is not right. (Teacher A)

Teacher A also told the researcher that she wished that her office had been painted a dark colour. The glare of the white walls hurt her sensitive eyes.

Therapist A said that the furniture arrangement should promote maximal individual contact between teacher and learners. If the teacher stands far away, in front of the class, with desks arranged in rows, learners will not see her. She recommends that the desks be arranged in a semi-circle.

…to make that contact and to communicate, so with partially sighted child you need to be close by to make eye contact, and as I explained earlier, some turn their heads to see, so they do not have good eye contact. Uhm – and with regard to a blind child – you need to touch them, say their names. (Therapist A)

Therapist A stressed that knowledge of eye conditions is vital for the teacher to make decisions in terms of classroom adaptations.

… eye conditions and their influence – for example, a child with albinism is sensitive to light, so you need to reduce the contrast, for a child with macular degeneration you need to provide more contrast, you need to know about adaptations that can be made in terms of font size, contrast, uhm – the light – light that needs to be used in the classroom …. (Therapist A)

4.4 Theme 3: Transition
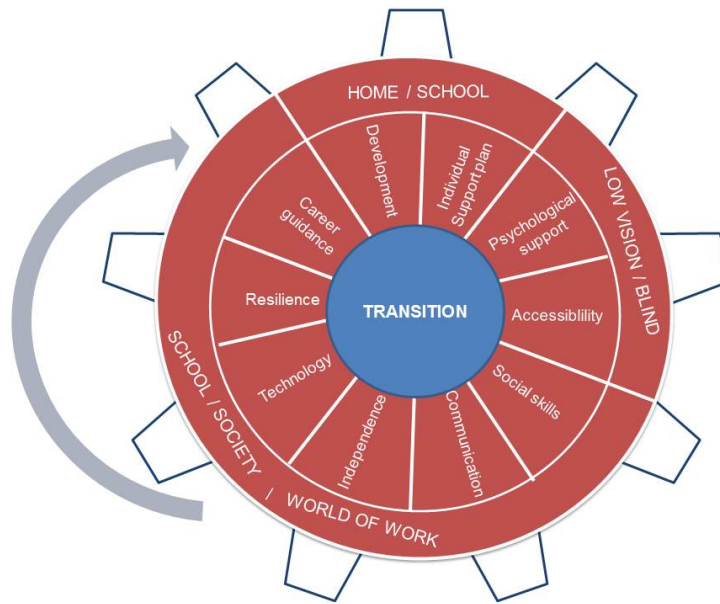
Figure 4.4: Visual representation of Theme 3: Transition

Three transitions emerged from the data: transition from home to school, transition from low vision to blindness, and transition from school to society and/or the world of work.

4.4.1 Transition from home to school

4.4.1.1   Development

Therapist B is an occupational therapist in her 70s. She has a lifetime of experience with learners with disabilities, especially visually impaired children. Her interview focused on the developmental challenges of learners with visual impairments. She pointed out that learners with visual impairments, especially blind learners, tend to have delayed milestones.

> *The movement of a baby, of a normal baby, is stimulated by the visual input he is getting. And the blind child is not getting that. So, they are very delayed in their development, in their physical development.* (Therapist B)

Therapist B described the way these milestones would be affected:

> *They – uh – will not turn their heads to see where is Mommy, because they cannot see Mommy. They will not reach out to take things. And reaching will help them to develop their shoulders and anti-gravity muscles. They will not start to sit. They will not start crawling. They will not walk. Uhm – a blind child only starts walking at about three years of age. Because they do not have – because – why does a child move? A child moves because he wants to fetch something he sees.* (Therapist B)

Therapist B explained how running needs to be encouraged:

They do not run, because they do not know what is in front of them – so you have to stimulate them – I let my blind children stand on one end of the passage and someone stands at the other end, and we call them, so that they walk between us. (Therapist B)

Blind children are often hypersensitive to certain textures, even orally.

Many blind children have feeding problems specifically. Not really because of the taste, because of the texture of the food. And the parents are inclined to give children what they want to eat – so then you get a four-year-old who only eats yoghurt. (Therapist B)

On the subject of muscle tone, Therapist B pointed out that visually impaired children tend to have a low motor tone:

These children have an acquired low motor tone. While you get other children that are born with low tone, these children develop a low motor tone because they do not use their muscles. (Therapist B)

Therapist B explained how a child's other senses need to be utilised to develop concepts and promote language development:

Their language development takes place in a totally different way than a sighted child's language development. Because you can tell a sighted child: "Look this is pepper, this is salt and here is a mug". You cannot say that to a blind child, because he cannot see it. You have to let him touch it and say: "Here is a chair, feel this is a chair. What are we doing with a chair? We sit on a chair. What is a chair made of? What does a chair sound like? What does a chair feel like? How high is the chair? The chair has four legs; let us feel all four legs." (Therapist B)

Blindness has an influence on language acquisition. According to Therapist B, visually impaired learners tend to start learning verbs first.

So, your blind child's language development happens in a totally different way. Number one – they speak about things that mean something to them. And that is going to be verbs.They say "eat", or "walk", or "sleep" and you understand, because they understand what that means. A normal child's development starts with nouns. (Therapist B)

Therapist B pointed out that blind children will use words that do not have any meaning to them. They are also inclined to echolalia:

So – semantically – his language development – he does not understand what he is saying. He says a lot of things, but he – he just repeats it, he does parroting. So – like a parrot – he speaks, but he does not know what it means. Echolalia is a big problem, because they continue – even after three years of age, they still say just what you say. (Therapist B)

With regard to pronouns, Therapist B explained:

And the other thing regarding language development that continues very long is about their personal pronouns – I and you – uh – because they talk about "you". They will not say: "I want to sleep." They will say: "You want to sleep." (Therapist B)

When they start asking questions, they will start to ask "what" questions more often than "why" questions.

A normal child, at the age of three years, starts asking questions: "Why, why, why, why?" A blind child will not do that. They will ask: "What is this?" but not: "Why is this?" (Therapist B)

Because of their visual impairment, parents seldom provide the same kind of stimulation that comes naturally with having a sighted child:

You will take your normal child from two months onwards on your lap and say, where are your eyes, where are your ears, where is your nose, but parents do not do it with blind children. So now I sit with three-year-old blind children who do not know where their eyes, ears, nose and mouth are, and they have to know their bodies, it is the start of scholastic development. (Therapist B)

Therapist A confirmed that Foundation Phase teachers must focus a lot on motor development.

Grade R to Grade3 … What we find, their motor development is often very much behind. Uhm – so a Foundation Phase teacher will have to focus on motor development – uhm – to get the child to the appropriate level. (Therapist A)

Parents reported that they found it difficult to support their children with homework, as they were unable to get "sighted" textbooks (printed textbooks). Parent A, who went to great lengths to support his son in his studies, complained:

…with regard to studies, I would say, a big problem is, the Department gives the teacher one "sighted" textbook. Now, as parent, I also want a "sighted" textbook, and they tell me, I cannot have one. We only have one or two copies. (Parent A)

In stark contrast, at rural schools (and in the hostels of urban schools), learners whose parents lived far away were separated from their homes and parents for long periods. When the researcher asked her about parental involvement in her interview, Teacher A explained:

> *Unfortunately, these learners are from all – eh – provinces. So some come from Venda, Eastern Cape, KwaZulu-Natal, Free State … So, it is difficult for the parents to be fully involved.* (Teacher A)

4.4.2 Transition from low vision to blindness

4.4.2.1 Psychological support

Therapist A pointed out that being visually impaired has a psychological impact on a child:

> *A teacher who works with the visually impaired will have to understand the emotional impact that the disability has on the child – uhm – and that differs from child to child, so if a child has been born blind, his emotional needs will differ from a child that has become blind later, or a partially sighted child.* (Therapist A)

Two of the participants, Adult B and Adult C, were sighted as young children and became blind as young adults. Adult B said that, as a child, no one told him that he was going to be blind one day. He was never prepared for the transition from being a partially sighted to a blind person. It would have helped a lot to be more prepared psychologically and skillswise. Because he was not emotionally ready for all these challenges, he fell into a deep depression and struggled to motivate himself to go forward. "I threw half of my life away," he said.

4.4.2.2 Accessibility

Adult C had to transition from having visual modes of access to literacy to having non-visual modes of access. Adult C can read Braille.

> *In School P, I read enlarged print; my primary school was a mainstream school.* (Adult C)
>
> *Oh, then you were still partially sighted? You were not blind yet?* (Researcher)
>
> *That is right. And then by Standard 8, I realised that I could not read print anymore, then I quickly learnt Braille, because I love baking, and I want to be able to read recipes!* (Adult C)

However, she does not prefer to use Braille as a primary mode of access. She relies a lot on her phone. The researcher will refer to this again later. In contrast to Adult C, Adult B also became blind as a young adult but never learnt Braille. He learnt to use the keyboard and utilizes a computer for access to literacy.

Teacher A is partially sighted. The school she attended as a child teaches all learners (blind and low vision learners) in Braille to prepare them for possible blindness later. Therefore, Teacher A prefers Braille as a mode of access to literacy. She studied at the University of the Witwatersrand (Wits), where there was a Braille section.

> *Yeah, I know Braille. I did my matric – up until matric – in Braille. I – when I was at Wits, I was also using Braille.* (Teacher A)

Teacher A had her own transition from normally sighted to low vision after she contracted measles as a little girl. At eight, she was placed in a school for the visually impaired. She had to start right from the beginning in Sub A. The Catholic sisters, who were managing the school at the time, registered her as though she was two years younger, to ensure that she could start Sub A as an eight-year-old.

4.4.3 Transition from school to society or the world of work

4.4.3.1   Social skills
According to Therapist B, social challenges begin right at birth for a visually impaired child. She explained:

> *The social interaction of any baby, his first social interaction, is eye contact with his mother. And a blind child does not make that eye contact with his mother, because he cannot see his mom.* (Therapist B)

In Therapist B's experience, over-protectiveness from parents can be an obstacle in the social development of children.

> *They are being kept from playing with other children – everyone is so afraid a blind child hurts himself. And they do not build a relationship with him; they cannot run around and do things with other children – so that is a very big problem.* (Therapist B)

Therapist A pointed out that social challenges are more problematic in inclusive settings than in schools for the visually impaired.

> *They do not fit in. Uhm, you can try to understand, but if you do not have an impairment yourself… So, what we experience at our school, the children help each other a lot, they have empathy for each other. Uhm, if someone struggles, then – where he would have been teased in another school, here, they will help each other.* (Therapist A)

Adult C stressed the need for adherence to rules and strict discipline.

Strict discipline is needed. Do not be afraid, thinking "Oh no, these poor children are blind, we are not going to discipline them." They must – there has to be discipline. And it has to be kept strict. (Adult C)

Adult A recommended the use of humour in classroom situations.

They need to have a sense of humour, because it helps. For most children, it helps to lighten the situation a little – to joke sometimes. They must not always be serious. Light-hearted remarks, such as "Oh, you seem to be blind today;" or "You are just sitting and looking at me today," actually makes it easier. (Adult A)

Adult C confirmed this statement.

Tell Johnny, I am putting you next to that naughty one so that you can keep an eye on him! So – humour! It lifts all that negativity connected to blindness. (Adult C)

Adult B warned that teachers should be on the lookout for bullying and should know how to handle those situations wisely. He cited a life-changing example from his own life, where he was bullied and pushed around by a senior learner (a prefect in the hostel). The supervising teacher sided with the bully, shouted at him and hit him unfairly. After this incident, he left school early.

All the adult participants stressed the need to promote social interaction among blind, low vision children and normally sighted peers. Teacher B said that his single-biggest challenge was social interaction with sighted people. Adult B proposed that schools create opportunities for social interaction with sighted peers. This is vital to prepare the learners to interact with sighted people in society. He cited examples of his own difficulties to interact with sighted people: "I go to a work function and then just sit there." (Adult B)

The other exposure that is really important is to sighted people. Uhm – many blind children leave school and now he has to enter a sighted world, and that is a big shock. Because at school, all was fine, you were in a protected environment, everything was revolving around what you needed. But now you enter a sighted word where no one cares. And I feel it is just so important to have more interaction with sighted children. Uhm – so that sighted people can know how to – uhm – handle a blind person, and so that blind people can learn from an early age how to socialise with sighted people. At primary school level, there should already be interaction between a school for the blind and mainstream schools. (Adult A)

To prepare visually impaired learners to be socially acceptable in the outside world, behaviour patterns that are not socially acceptable, such as blindisms, should be eliminated.

> *Many blind people have strange behaviours – they will do this (he rotates his head) and that has to do with sound sensation. But it looks very weird if someone sits and does that, so they have to be taught strictly to sit still.* (Adult A)

Adult B stressed the role of sport at school. He was disappointed that sport for blind persons is receiving less and less attention, even at the school that he used to attend. Learners build self-confidence by means of sport and become more independent.

Adult C pointed out that blind people need to "blend in" and not stand out, but that this skill has to be taught.

> *If teachers can help you to blend in – so that you do not look blind. You know, some blind people you recognise as blind from the back. You know, the hairstyle is so pathetic, my gosh. And body language. Teachers really need to tell them: "If you sit on a chair, sit like this, and you can swing one leg over the other, do not sit like a stick man. Do not hang your shoulders, sit up straight, and move your eyes from left to right."* (Adult C)

Adult C expressed the wish that her teachers could have prepared her more for the outside world by helping her to dress appropriately.

> *I would have loved it if – uhm – especially because I am a girl – if my teachers could have given me more of an introduction to – uhm – trendy clothing and fashion. In other words – how to dress fashionably, if they could tell you, do you know – uh-uh – they are not wearing bellbottoms anymore out there… they need to guide you in such a way that you fit in when you leave school. So that it does not look as if you walked out of another movie.* (Adult C)

4.4.3.2   Communication skills

Communication skills are closely connected to social skills. Adult C pointed out that the blind person needs to speak up and make his or her needs known.

> *You have to – you have to speak. Even though you have a cane, you still need to speak. You still need to verbalise, the people around you need to be fully aware of your needs. It is your duty to tell them.* (Adult C)

To communicate effectively, visually impaired people need conversational skills. Adult C explained how she acquired good conversational skills.

I realised that, when I look at people that are talking to me, they understand me better. So I quickly realised that I should not stare at the roof or other places. I practised maintaining a normal body posture. Then people find it easier to interact with me. (Adult C)

4.4.3.3 Independence skills

Adult C expressed the shock of transition from school to society by describing how her independence skills were lacking.

What I realised after completing matric, was that I did not know life outside. I knew the school. That was where I was protected. I did not think of myself as someone who cannot see. But when I entered the world outside, I saw – here I am on my own. And – I was not prepared for that. How to wait for a bus. And – uhm – I am not in a group. In the school, I was part of a group of children who could not see. Now, in the world outside, I was totally on my own. And I felt as if the public did not know what to do with me. (Adult C)

She stressed that, compared to academic skills, independence skills are the skills that matter for a blind person as a human being:

You can spell and you may have studied, but as a human, how do you buy earrings in a shop? You so much want to go to a coffee shop, but you are too shy – you do not know what to do when they give you the menu – those are things that affect you as a human being. (Adult C)

Parent A expressed deep gratitude for the work the orientation and mobility specialist at his son's first school did.

So what Dr M (mobility specialist) did, Dr M gave one-on-one attention to the children. So he took W to Tygervallei and told him, W, here we are in front of Stuttafords. I am going to walk down the passage; I will meet you at Edgars. Get to Edgars on your own. (Parent A)

Therapist A stressed that the team of occupational therapists at their school aimed at cultivating a positive attitude in the minds of the learners and promoting independence.

We focus a lot on independence, so to know that you have a disability, but you are not disabled. You can do everything that a normal child can do. You can achieve everything. So we – we do not want to say we pressurise them, but we motivate them not to view themselves as someone with a disability who needs pity – they need to be independent, with regard to self-care, mobility…. (Therapist A)

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4.4.3.4 Technology

When a visually impaired person makes the transition from school to society, his or her needs for technology suddenly differ. Adult C expressed her opinion as follows:

> *Yes, and another thing that I have realised, honestly, in life after school, if you are blind and you depend on all these impressive blind aids, then you become so heavy with your own blindness! (laughs) You need to travel light. You have your phone and you are off!* (Adult C)

Adult C depends largely on her phone for most of her technological needs. She uses voice commands to access the internet. She can order an Uber ride, research interesting facts, send emails, make telephone calls and send messages.

4.4.3.5 Resilience

Adult B had to endure unacceptable conduct by sighted people in society. He cited two examples. Firstly, he was offered a job to wash glasses and was told that the manager would pay him whatever he (the manager) thought he was worth. He told the manager to wash his own glasses. Secondly, he worked in a bar when he still had a little sight left and was jeered at because he had to pour the drinks with his face very close to the glasses. He took revenge by overcharging the rude customers.

Parent C1 warned that over-protection does not prepare learners for reality outside school.
The school protected them a lot – terribly. They were really kept in cocoons. And you cannot – because reality is not in a cocoon. (Parent C1)

Adult C confirmed this.

> *I had a mom who did not pamper us at all. So, I did not find it traumatic if teachers were strict. But I saw that some of my friends, whose parents were more protective, they suffered. I – it probably starts there. It already starts at home if your mom pities you because you are a blind child.* (Adult C)

Some participants felt that resilience could be promoted by providing learners with tough challenges at school level. School Leaver A proudly told the researcher about a long-cane rally that he had taken part in as a young boy.

> *In Grade 4, I did a long-cane rally. I have a T-shirt that says "Long Cane Rally" – then they walked with us all the way. It was 15 km.* (School Leaver A)

4.4.3.6 Career guidance

Adult B felt that blind learners need much better career guidance. At school, he was never given any guidance about job opportunities for blind people.

> *Do not tell him he cannot be a chef. Nonsense! Who says you cannot measure quantities? I use a syringe to measure with.* (Adult B)

Adult A started his interview with a reference to a hurtful incident just before he left school. He was called to the psychiatrist's office to discuss possible job options after school.

> *Then they asked me what I am going to do, and I really wanted to study agriculture at the time. Then I said, "Oh, I want to study agriculture". Then the – there was a psychologist at school at the time – then they told me: "Never in your life. You will never be able to do that". Then they said: "You will either become an attorney or you will work on a switchboard. Those are the only careers that a blind person can have".* (Adult A)

Parent C1, Adult A's father, commented:

> *They are boxing the children in and they decide in advance – the child – not even the child, the children – cannot do this and that, so we are not even going to try it.* (Parent C1)

Adult C told a bitter little joke, illustrating how limiting people's ideas of career opportunities for visually impaired people are:

> *They are very stereotype. Did you know, Samson – when they took out his eyes, they made him grind the mill. Do you know why? Because there were no switchboards.* (Adult C)

She suggested that blind people may be used at information desks.

> *I feel you can use blind people at information desks. You can put a blind person at an information desk with a notice saying: "Please speak to me, I am blind." Then, if someone asks: "Where is Incredible Connection?", the blind person can say, "Uh – about 30 m to the left, just after Edgars, there you will find Incredible Connection."* (Adult C)

Adult A realised that some careers are inaccessible for blind people, but pleaded that teachers should speak about career guidance in less limiting terms.

> *Some choices are really impractical – a blind child cannot be a bus driver. So, eventually you are going to tell that child: "Listen, I am sorry, the danger is just too big. You cannot become a bus driver." But other things – one should always investigate, is*

there a way to do it, or is there no way to do it. There are many possibilities other than being a switchboard operator or an attorney. (Adult A)

4.5 Discussion of results

In Chapter 2, the conceptual framework combined universal design principles and teacher competencies (knowledge, skills and values). The holistically enabling model was utilized to illustrate that teacher competencies should speak holistically to learner needs. The figures are repeated here for clarity's sake:
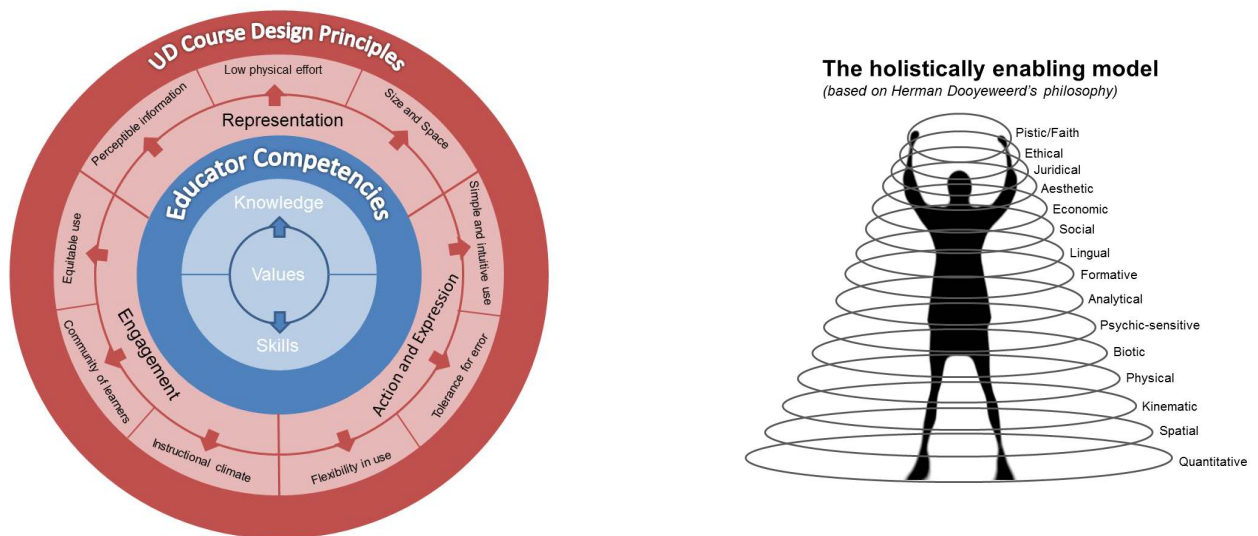
Figure 4.5: Conceptual model and holistically enabling model

In this discussion, the researcher will refer to the figures above to consolidate and organize the results leading up to the summary and findings in Chapter 5.

4.5.1 Values as a central driving force in teaching

According to Nieuwenhuis et al. (2014, p. 9), a value refers to that which is worth striving for or living for. Nieuwenhuis et al. (2014, p. 11) believe that values have a motivational and directional purpose. Values and the meaning we attach to life are closely aligned to the spiritual part of our beings (Nieuwenhuis et al. 2014, p. 14). The inspirational value of teachers mentoring learners with challenges such as visual impairment is closely related to the Universal Design principle of engagement. How do teachers of the visually impaired engage with their learners? Participants repeatedly pointed out that teachers of the visually impaired need to be patient, committed individuals with a passion to go the extra mile. They need to believe in their learners, have empathy, but also challenge them and motivate them to be the best that they can be. Only visually impaired adults who face life's challenges with

self-confidence and resilience will be able to reach their full potential. Looking at the holistically enabling model, the pistic aspect of human is right on top, where maximum functionality is reached. The pistic aspect refers to values such as vision, commitment, hope and courage. By displaying appropriate values themselves, teachers strive to mentor their learners towards becoming holistically enabled – living with hope, commitment and courage, because life is worth living.

4.5.2 Accessibility as key to success

A key is an object that allows access to places and things. Unfortunately, learners with visual impairments find themselves locked out of important opportunities to learn, which constitutes an infringement of their right to education. The Universal Design principles of representation and of action and expression are of importance in this instance. The principle of representation refers to the fact that learners with visual impairments need multiple means and methodologies to access learning (such as tactile aids, models, real objects and auditory description). To access literacy, blind learners need to read and write in Braille. A learner without a Braille machine to take notes or to do homework, is essentially robbed of a very basic right to access education. The principle of action and expression refers to the fact that learners need to be given the opportunity to show what they have learnt in different ways. For example, most learners with visual impairments need more time to finish tests and examinations. Exam papers need to be made accessible. As participants pointed out, often tables and drawings are not depicted correctly on exam papers. A one-size-fits-all approach will lock the learner out of his rightful opportunity to be assessed fairly.

4.5.3 Teaching towards transitions

Teachers often get so swamped with the challenges of their daily workloads that they forget that they need to work with a long-term goal. Results showed that teachers need to prepare to send their learners through transition periods into new phases of life. Participants identified three transitions in this study. Firstly, young visually impaired children tend to have significant developmental delays that may prevent them from transitioning successfully into the formal learning environment of the foundation phase years. With reference to the Holistically enabling Model, the formative, analytical and lingual aspects develop during this period. Grade R teachers have a huge responsibility to go the extra mile by addressing these challenges to facilitate transition effectively.

Secondly, some learners have eye conditions that will most probably cause them to go blind later in life. If teachers are not aware of these learners' plight and do not prepare them in advance, these learners will have serious challenges with their learning and basic independence skills, having not learnt how to read Braille or how to orientate themselves. Thirdly, all adult participants in the study pointed out that the transition process into society

was a huge shock to them. The skills they lacked were not necessarily academic ones. The participants mostly had challenges with regard to independence and social skills – essentially the areas of the Expanded Core Curriculum. Something that was mentioned repeatedly was the choice of technological aids to support literacy and information access. Participants believed that, in today's world of work, computer skills were vital, even more important than Braille, as Braille would not be in use in tertiary institutions and work places.

4.5.4   The link between learner needs and teacher competencies

The needs of learners, as pointed out under the themes above, are the most important consideration for determining which teacher competencies should be included in the advanced diploma, where the research was aimed at. Each individual learner has unique needs and a holistic view (such as depicted in the holistically enabling model) is needed. A more detailed discussion of this topic will follow in Chapter 5.

4.6   Conclusion

Listening to the voices of the participants, some of them desperate to be heard, was a life-changing experience. In Chapter 5, the researcher will endeavour to use the findings to compile more specific suggestions with regard to the outlay of an advanced diploma for teachers of learners with visual impairment.

CHAPTER 5 SUMMARY OF FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

5.1 Summary of findings

Chapter 4 presented the results of the study, concluding with a discussion of the results. In this chapter, the researcher presents a summary of the study's findings guided by the research questions stated in Section 1.4.

5.1.1 A visual representation of findings from the main research question

Which core competencies should be included in teacher development to equip students to holistically address the needs of South African learners with visual impairments?
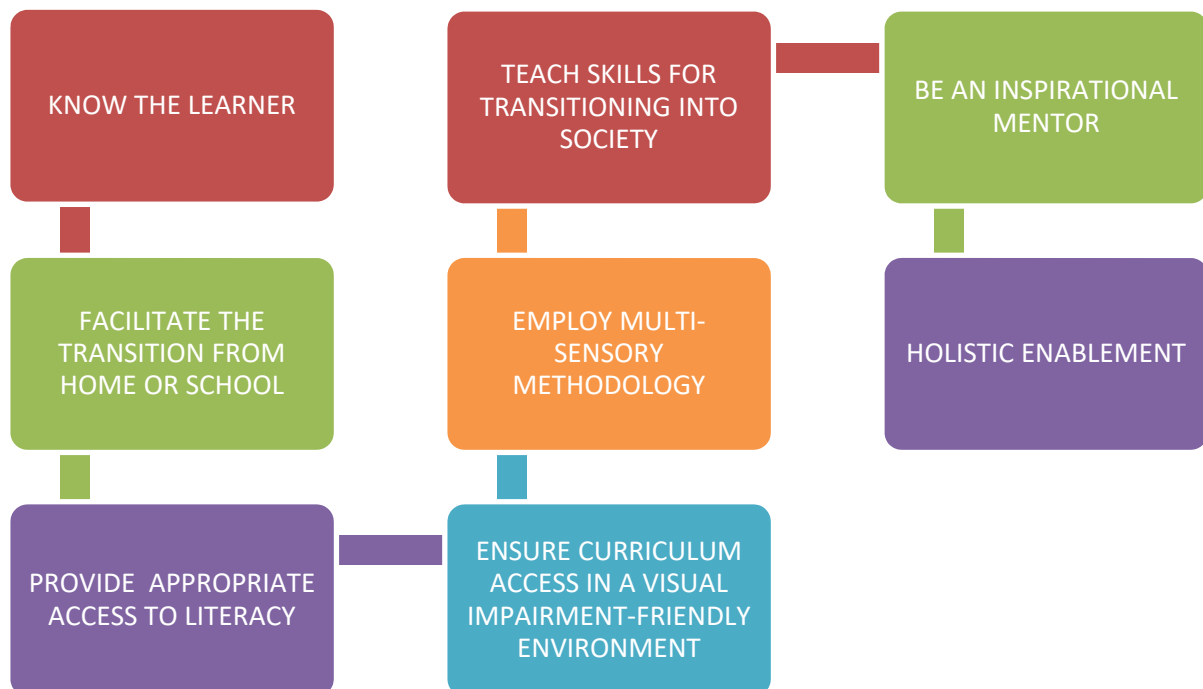

Figure 5.1: Core competencies to be included in teacher development

5.1.1.1 Know the learner

In this study, participants indicated the need to learn as much as possible about the learners, such as their home circumstances, medical background, eye condition, co-morbidities, level of cognitive functioning and anything else that could be of importance to draw up a comprehensive individual support plan according to the DBE's SIAS Policy. Having a holistic approach by working in a team with specialists such as therapists, doctors, social workers and an orientation and mobility specialist was seen as an important skill.

5.1.1.2 Facilitate transition from home to school
Teachers need to know and understand how typical children develop, as well as how visually impaired learners are challenged regarding their development, so that they can address these challenges effectively.

5.1.1.3 Provide appropriate access to literacy
Access to literacy depends on the learner's specific eye condition. Teacher competencies such as knowledge of Braille (Grade 1 and 2), the ability to use assistive devices such as low vision aids and software such as JAWS are at play here.

5.1.1.4 Ensure curriculum access in a visual impairment-friendly environment
Participants pointed out that curriculum access needs to be attended to by ensuring that the learning material is not "too much or too broad." Other issues were inappropriate assignments and the accessibility of the curricula of 'difficult subjects' such as Mathematics and Physical Science. Aspects such as seating arrangements and lighting were identified to ensure VI-friendly environments.

5.1.1.5 Employ multi-sensory methodology
Participants stressed the need of the use of multi-sensory methodology, such as the use of real objects, tactile modes and detailed auditory description.

5.1.1.6 Teach skills for transitioning into society
Blind adult participants, in particular, stressed the importance of the teaching skills that are needed to transition into society. They stressed that learners should not be over-protected so that they can develop resilience to face the world when they leave school. Skills needed for this transition are social skills, communication, conversational skills, independence skills and the use of appropriate technology for access to information.

5.1.1.7 Be an inspirational mentor
To face all the above challenges, and to work at all the competencies needed to meet the needs of visually impaired learners, an inspired teacher is needed. Qualities such as patience, empathy, passion, confidence in learners, religious belief, resilience and good work ethics emerged under the topic of "values."

5.2   Findings from the secondary research questions
Because the researcher argued that teacher competencies needed to address learner needs, she would like to show how findings complement each other:

Table 5.1: Summary of learners' needs and the corresponding competencies

Learners' needs	Teachers' competencies		
	Knowledge	**Skills**	**Values**
Need to be understood	• Know eye conditions • Know co-morbidities • Know SIAS Policy	• Can assess learners • Can work in a team • Can draw up an individual support plan	Empathy Work ethics
Need to be stimulated appropriately to reach school-readiness	• Know typical milestones • Know developmental challenges of visually impaired learners • Know methods to address challenges	• Can stimulate visually impaired learners appropriately with regard to gross motor, fine motor and language development	Empathy Patience Passion
Need to access literacy	• Know Braille for Grade 1 and Grade 2 • Know different available assistive devices for access to Braille literacy • Know software such as JAWS • Know different LVAs that are available • Know which eye conditions may lead to blindness	• Can do Braille instruction • Can use assistive devices and assist learners with their use • Can use JAWS and assist learners in its use • Can convert learning material into Braille correctly • Can make enlarged learning materials with a photocopy machine • Can assess learners for the purpose of the introduction of dual modes of literacy	Passion Work ethics Resilience

Learners' needs	Teachers' competencies		
	Knowledge	Skills	Values
Need to access curriculum for learning	• Knowledge of multi-sensory methodology • Knowledge of the way visually impaired learners' form concepts • Know the importance of repetition		Patience Passion Creativity Empathy
Need for a visual impairment-friendly environment	• Knowledge of eye conditions and educational implications • Knowledge of physical challenges of learners with additional disabilities (cerebral palsy)	• Can arrange furniture appropriately • Can place learners appropriately with regard to lighting • Can ensure safe environment (no unexpected obstacles) • Can think innovatively to solve challenges (such as different timetabling)	Empathy Passion
Need skills to transition successfully into society or the world of work **Need to be believed in** **Need to be respected**	• Know challenges with regard to social skills that learners typically experience and how to address them • Know basic orientation and mobility skills • Know challenges with regard to independence skills that learners typically experience	• Can organise social functions and sport activities for interaction with visual impairment as well as sighted peers • Can organise outings to practise mobility skills • Can organise challenging activities to promote independence and	• Religious belief or belief in learners' abilities • Passion • Empathy • Sense of humour

Learners' needs	Teachers' competencies		
	Knowledge	Skills	Values
	• Know different careers available for visually impaired people and adaptations to be made to facilitate access to the world of work	resilience (such as camps) • Can organise and facilitate discussion groups for psychological support • Can maintain discipline	

5.3   Limitations

The first limitation of this study was that the study is that the sample of this qualitative study was too small to generalise the findings. The second limitation of this study is that the parent and school leaver interviewees were all white, Afrikaans speaking, and more privileged. It was virtually impossible to secure appointments with parents in rural areas, as the learners were staying in hostels and their parents lived far away. The third limitation to the study was the data from the PRA workshops. The poster data that the workshops yielded was not rich enough. It consisted of the short phrases that the participants wrote on the posters. The poster data gave the researcher good pointers towards the themes and categories that could be identified, but no other layers of information, as in the case of the interviews. The PRA workshop data served mainly as a member checking measure. It helped the researcher to ensure that she was on the right track with regard to themes and categories.

5.4   Recommendations

5.4.1   Recommendations for research

With regard to access, the researcher believes a great deal of research should go into affordable technology and assistive devices for learners with visual impairments, aimed at long-term use when they transition into society. Some devices that are currently used, such as Perkins Braillers, are old, heavy, impractical and expensive. A device such as an Apex machine is too expensive and has only one main purpose. One of the researcher's participants called for simpler, cheaper, more multi-purposed means of access. She relied only on her iPhone.

With regard to transition, the researcher believes that more research is needed to identify the barriers to successful transition that learners with visual impairment experience when ending their school careers and how to address these. All the adult participants in the study said that the transition process into society or world of work was a major shock and that their school education did not prepare them appropriately for this.

5.4.2   Recommendations for policy

South Africa has very good policies designed to protect the rights and needs of people living with disabilities. The researcher's recommendation is that in-service and pre-service teachers for learners with visual impairments should be required to arm themselves with comprehensive knowledge of these policies so that they can become advocates for the rights of their learners and, in doing so, assist to reduce 'policy evaporation'.

5.4.3   Recommendations for practice

The researcher would like to focus on matters that are directly related to the implementation of the envisaged advanced diploma, which was this study's ultimate aim. She would like to make the following practical recommendations:

5.4.3.1   The use of blind presenters and experienced stakeholders in the field to do training

One of the researcher's participants expressed the wish to share her life's experiences for the benefit of children with visual impairments. Using capable blind presenters in some modules can ensure that the diploma really speaks to the actual needs of the learners it should serve.

5.4.3.2   The use of universal design principles to make the course accessible for students with disabilities, especially visually impaired students

As the researcher wrote earlier in this dissertation, if a blind student should register for this diploma and finds it to be inaccessible, it would really be an unacceptable and ironic situation. The principles of multiple means of representation, expression and means of engagement should be implemented fully in the proposed advanced diploma.

5.4.3.3   Sufficient practical exposure

Even though most of the teachers in the field have not been formally trained specifically in teaching visually impaired learners, some of them are very experienced individuals who can impart valuable knowledge and skills to students. Some participants who took part in this study also recommended exposure to sports events for the blind and activities such as blind rallies.

5.5 Conclusion

This study used critical realism as a paradigm to probe the real-life challenges of learners with visual impairments in South Africa and to utilise the real-life experiences of different stakeholders in the visually impaired community to determine which competencies are needed to address the needs of learners with visual impairments in South Africa.

The data of this study will form part of the development of an advanced diploma for teachers of learners with visual impairments. This is an important first step towards the holistic enablement of learners with visual impairments in South Africa. It is hoped that this study will be a small step towards the realisation of the dreams and ideals of young people with visual impairments. They need inspired, competent teachers who make "the seemingly impossible possible" in order to be prepared for the challenges of a society that is still not ready to view them as functional individuals and a that has to be educated by strong, positive and confident stakeholders in the visually impaired community.

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ANNEXURES

Annexure A: Letter of request to conduct research

Annexure B: Letter of permission from the Limpopo Department of Education

Annexure C: Invitation to participate in research: principal

Annexure D: Explanatory letter to interviewees

Annexure E: Informed consent letter for interviewees

Annexure F: Informed consent letter for educator participants at school participatory workshops

Annexure G: Extracts from transcribed interviews.

*Please note: I included **one example** of each kind of letter. Letters to other provinces, principals and participants were based on these examples. The leaders of the project of which this study was part signed the letter to the DBE.*

ANNEXURE A:

LETTER OF REQUEST TO CONDUCT RESEARCH

Head of Department

Department of Education building

Cnr 113 Biccard and 24 Excelsior Street

Polokwane North

Polokwane (Pietersburg)

0699

REQUEST TO CONDUCT RESEARCH IN LIMPOPO PROVINCE SCHOOLS

The Department of Higher Education and Training (DHET), in collaboration with the European Union (EU), has embarked on a national project that aims to empower educators to implement inclusive education policies. The DHET identified three priority areas for the development of qualifications in support of educators who teach children with disabilities, of which visual impairment is one. The aim is to better equip educators at both mainstream and specialised schools.

The Department of Educational Psychology at the University of Pretoria was successful in securing DHET/EU funding to develop an Advanced Diploma in Education: Visual Impairment Studies. This qualification is targeted at educators at mainstream or full-service and specialised schools, and will aim to enhance educators' knowledge and skills in teaching learners and managing schools that cater for learners with visual disabilities. This qualification will therefore support the DHET's strategic response to White Paper 6 (inclusive education policy), focusing on the inclusion of learners with special needs in mainstream schools and empowering educators to offer quality education in such instances. No formal qualification in this field is currently offered in South Africa. The development of the qualification will be based on research in the field, involving both mainstream or full-service and specialised schools in South Africa.

We hereby request your province's participation in the project. More specifically, we would like to invite educators from two specialised schools of the visually impaired and blind and two full-service schools that admit learners regardless of their disabilities. We invite them to participatory workshops and follow-up individual interviews if required. Workshop

discussions will focus on educators' needs and expectations when teaching learners with visual disabilities, and will subsequently inform the content of the modules that will form part of the said qualification. These workshops will also focus on the envisaged implementation of inclusion education policy. Following the development of the module content, educators will be invited to a colloquium, for feedback and additional ideas before the module content is finalised. As the participatory approach that we will follow involves cycles of reflections and the formulation of possible action plans, educators may also gain ideas for implementation in discussion with others. Our criteria for requesting educators' participation are based on the expertise they hold in the field of visual impairment education contexts and inclusive education.

The research will be qualitative and rely on case study design. Participants will be purposefully selected and the criteria will be as follows:

Participants need to be teaching at full-service schools (mainstream) and/or specialised schools.
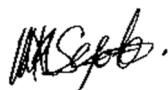
Participants in specialised schools need to be working with learners who are visually impaired.

Participants may need to be able to understand and communicate in English.

Participants need to be willing to voluntarily participate and give informed consent; however, they will have the right to withdraw.

Thank you for your consideration of this request.

Kind regards

Prof Ronël Ferreira   Dr Max Sefotho   Ms Maesala Thabe

ANNEXURE B:

PERMISSION TO CONDUCT RESEARCH

DEPARTMENT OF
EDUCATION

Ref: 2/2/2   Enq: MC Makola PhD   Tel No: 015 290 9448   E-mail:MakolaMC@edu.limpopo.gov.za

Maesala , Sefotho & Ferreira

Department of Educational Psychology

Faculty of Education

University of Pretoria

Groenkloof Campus

0001

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: **"DEVELOPMENT OF QUALIFICATIONS IN SUPPORT OF EDUCATORS WHO TEACH CHILDREN WITH DISABILITIES".**
3. The following conditions should be considered:
3.1 The research should not have any financial implications for Limpopo Department of Education.
3.2 Arrangements should be made with the Circuit Office and the schools concerned.
3.3 The conduct of research should not anyhow disrupt the academic programs at the schools.
3.4 The research should not be conducted during the time of Examinations especially the fourth term.

REQUEST FOR PERMISSION TO CONDUCT RESEARCH: MAESELA,SEFOTHO & FERREIRA

CONFIDENTIAL

Cnr. 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X9489, POLOKWANE, 0700
Tel: 015 290 7600, Fax: 015 297 6920/4220/4494

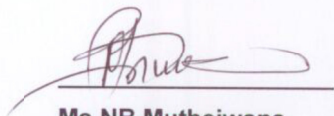*The heartland of southern Africa -* development is about people!

3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).

3.6 Upon completion of research study, the researcher shall share the final product of the research with the Department.
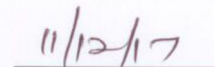
4 Furthermore, you are expected to produce this letter at Schools/ Offices where you intend conducting your research as an evidence that you are permitted to conduct the research.

5 The department appreciates the contribution that you wish to make and wishes you success in your investigation.

Best wishes.

Ms NB Mutheiwana
Head of Department

11/12/17

Date

ANNEXURE C:

INVITATION TO PARTICIPATE IN RESEARCH:

PRINCIPAL

The Principal/Deputy Principal

Bartemia School

Private Bag X 723

Selosesha

9785

INVITATION FOR PARTICIPATION IN RESEARCH

Dear principal/deputy principal

The Department of Higher Education and Training (DHET), in collaboration with the European Union (EU), has embarked on a national project that aims to empower educators to implement inclusive education policy. The DHET identified three priority areas for the development of qualifications in support of educators who teach children with disabilities, of which visual impairment is one. The aim is to better equip educators at both mainstream and specialised schools.

The Department of Educational Psychology at the University of Pretoria was successful in securing DHET/EU funding to develop an Advanced Diploma in Education: Visual Impairment Studies. This qualification is targeted at educators at mainstream and specialised schools, and will aim to enhance educators' knowledge and skills in teaching learners and managing schools that cater for learners with visual disabilities. This qualification will therefore support the DHET's strategic response to White Paper 6 (inclusive education policy), focusing on the inclusion of learners with special needs in mainstream schools and empowering educators to offer quality education in such instances. No formal qualification in this field is currently offered in South Africa. The development of the qualification will be based on research in the field, involving both mainstream and specialised schools in South Africa.

We hereby request your participation in the project. More specifically, we invite you and your educators to participatory workshops and follow-up individual interviews if required. Workshop discussions will focus on your needs and expectations as educators when

teaching learners with visual disabilities, and will subsequently inform the content of the modules that will form part of the said qualification; these workshops will also focus on the envisaged implementation of inclusion education policy. **These workshops are intended to take place on two consecutive days, two to three hours on each day, on 12 and 13 March 2018**.

Following the development of the module content, you will be invited to a colloquium, for feedback and additional ideas before the module content is finalised. As the participatory approach that we will follow involves cycles of reflections and the formulation of possible action plans, you may also gain ideas for implementation in discussion with others. Our criteria for requesting your participation are based on the expertise you and your educators hold in the field of visual impairment education contexts and inclusive education.

Participation will be voluntary and you will have the right to withdraw if you wish to do so, at any stage of the study. Permission and ethical clearance from the Department of Education and the University of Pretoria has been granted. Activities involving you and your fellow educators will be arranged for **after school hours**; **however, permission for classroom observation is requested for one morning**. Data that is generated will be treated as confidential, and you, the school and other educators' privacy and anonymity will be secured at all times. You will also be protected from harm throughout your involvement in the project. We understand that we are inviting you to be present after hours, which is why refreshments will be provided.

Thank you for your consideration of this invitation.

Kind regards

_____   _____   _____
Prof Ronël Ferreira   Dr Max Sefotho   Ms Maesala Thabe

ANNEXURE D:

EXPLANATORY LETTER FOR INTERVIEWEES

University of Pretoria

Faculty of Education

Leyds Street South

Groenkloof Campus

Pretoria

0002

6 October 2017

Dear participant

Thank you for participating in this research project. This study is part of a project that was conducted by the Department of Educational Psychology at the University of Pretoria in collaboration with Prof Ronël Ferreira, Prof Ruth Mampane and Dr Maximus Sefotho.

The aim of the research

The research aims to collect data that will form part of the development of an advanced diploma for teachers of the visually impaired. During the study, participants will be consulted about their experiences with regard to learner needs and teacher competencies. The results of the research will assist the Department of Higher Education and Training (DHET) with the programme outline of the advanced diploma in visual impairment studies.

What will be expected of you during your participation?

The discussion or interview will be semi-structured. That means that the researcher will put a few basic questions to you, but that you should feel free to elaborate as much as you feel is needed.

The questions will revolve around the following:

- The needs of learners
- The knowledge, skills and values of educators
- The current situation in classrooms in terms of resources, assistive devices, the curriculum and what changes in this regard are needed in the view of the participant

Who else is taking part in the research?

The study takes the shape of an action research project. This means that the collaboration of all participants will, in the end, be to their own advantage. Having well-trained teachers will be to great advantage of the community of people who are visually impaired and their loved ones, as well as to the teaching community itself. It can be the start of a better future for all people with visual impairments, which is what our ultimate aim is. We therefore plan to involve a wide spectrum of stakeholders in the visually impaired community, namely teachers, parents, school leavers above 18 years, therapists and visually impaired adults of different walks of life. YOU can make a difference by being part of this project. Be the difference you would like to see.

MARIETHA MALAN
RESEARCHER

ANNEXURE E:

INFORMED CONSENT LETTER FOR INTERVIEWEES

CONSENT TO PARTICIPATE IN RESEARCH PROJECT

Researcher: Marietha Malan (MEd student)

Institution: Department of Educational Psychology, University of Pretoria

Title of study (research topic): *Towards developing teacher competencies for the holistic enablement of visually impaired learners*

I hereby invite you to participate in this study. Please read or listen to the following statements, whereafter I will request you to either sign the letter or give oral consent on a recording.

1. I understand that there are no risks to participate in this research.
2. I understand that my participation in this study is voluntary and that I may withdraw at any time.
3. I understand that the data will be handled with utmost confidentiality. No identifying information will be used.
4. I understand that data will be published in the form of a dissertation or an article.
5. I understand that there is no direct benefit or financial gain when participating in this research. However, the information collected will help curriculum designers to create a comprehensive advanced diploma for the training of teachers of visual impairments.
6. I understand that if I have any questions or concerns, I may call the researcher at 074 493 0479 or email mariethamalan0@gmail.com.

_____

PARTICIPANT

ANNEXURE F:

INFORMED CONSENT LETTER FOR EDUCATOR

PARTICIPANTS AT SCHOOL PRA WORKSHOPS

CONSENT LETTER

Dear educator

Background

You are invited to participate in a research study by the Department of Educational Psychology at the University of Pretoria. 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 any clarity you may need.

Purpose of the study

The purpose of this study is to explore educators' needs, experiences and expectations in terms of the implementation of inclusive education policy, more specifically in support of learners who are visually impaired. The study's findings 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 two to three hours each, which will be presented after hours at your school over two days, towards the end of 2017 or the 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 your and your school's 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 _____

ANNEXURE G:

EXTRACTS FROM TRANSCRIBED INTERVIEWS

INTERVIEW TEXT	CODES

ADULT A: <mark>Teachers need to know Braille, because many of the teachers did not know Braille, then they had to ask some of the learners to read and mark for them, and that is difficult, you cannot always ask a child to read for you.</mark> They did start implementing it – it was just when I was about to leave school – they began to teach all the teachers Braille. But – it is difficult as well, because many arrive there – they are middle-aged or so, and then – to start learning Braille is not easy. So I totally understand that it is difficult for a teacher to learn Braille. But is important – <mark>at least there should be someone at school that can read Braille and who can transfer the Braille-documents to writing, so that it can be marked – uhm – those are some of the options that can be looked at.</mark>

BRAILLE KNOWLEDGE
MARKING LEARNERS' WORK

BRAILLE SPECIALIST

RESEARCHER: Braille Grade 1 and Grade 2?

ADULT A: Yes. <mark>Look, Grade 1 is easier, because you have [fewer] contractions and so on. Uhm - if you do that, you have a basic knowledge, but Grade 2 is better, because – look, at high school it is all you use.</mark> So –

LEVEL OF BRAILLE PROFICIENCY NEEDED

RESEARCHER: So you will not be able to mark work in high school if you do not know contractions.

ADULT A: No – primary school up to about Grade 4 – they will be able to do that. <mark>But from Grade 4 and higher up I cannot see how a teacher can mark work if they do not have Grade 2 level knowledge.</mark>

INTERVIEW TEXT	CODES

ADULT C: What I did realise after having completed matric at school P, was that <mark style="background:cyan">I did not know life outside. I knew the school. That was where I was protected,</mark> I did not think of myself as someone who cannot see. <mark style="background:cyan">But when I entered the world outside, I saw – here I am on my own. And – I was not prepared for that.</mark> <mark style="background:lime">How to wait for a bus</mark>. And – uhm – I am not in a group. At school I was part of a group children who could not see. Now, in the world outside, I was totally

SOCIAL CHALLENGES
Lack of preparation for challenges in society
Over-protection

INDEPENDENCE SKILLS –

on my own. And I felt as if the public did not know what to do with me. It took – it took time for me to realise, I have to give guidance to the public from my side. ==It is my duty to tell the public, I need some adaptation here, or come and help me here – I had to let them know what my needs were.== I could not just assume that the public knew how to deal with someone with a visual impairment. I had to take stock of each situation, and fast, ==and then had to tell the individual who was going to help me exactly what I needed==. So it was my responsibility to guide the public.

orientation and mobility

COMMUNICATION

INTERVIEW TEXT

Therapist A: We provide a – uhm – how will I call it – ==we provide the teachers with an experience of what it feels like to be blind or what it feels like to have a visual impairment,== so, uhm – the needs of the children depend on the type of impairment they have, or on the type of condition, if they have retinal pigmatosis, then it differs a lot from macular degeneration, so then, what we do in our training, we use different aids, so, ==we have different glasses that simulate the different eye conditions. Then the teacher has to wear the glasses and try to execute a few tasks== – he has to read, walk down the passage and – uh – he has to try and spread a sandwich – just to get the feeling of how it is to live with that kind of disability, and then – ==to experience blindness – we give the blindfolds and tell them, do different tasks==, so then they get an experience that helps them to have empathy with the children.

CODES

EMPATHY: Putting yourself in a visually impaired learners' shoes – simulation or blindfolding