A COMPARISON BETWEEN THE WRITTEN ENGLISH OF DEAF AND HEARING CHILDREN IN THE NELSON MANDELA METROPOLE

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A COMPARISON BETWEEN THE WRITTEN ENGLISH OF DEAF AND HEARING CHILDREN IN THE NELSON MANDELA METROPOLE

by

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DECLARATION:

In accordance with Rule G4.6.3, I hereby declare that the above-mentioned treatise/ dissertation/ thesis is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

SIGNATURE: _____

DATE: **10 MARCH 2010**

Dedication

To four special girls who made teaching a pleasure:
Yeong-Eun Bae, So-Jin Bae, Ji-Eun Bae and Ha-Eun Bae
and
to Alastair, Brenda and David Weir and David Morton

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SUMMARY

The main purposes of this thesis are to investigate the difference between the written English of deaf children and the written English of hearing children and to make recommendations on how to improve the writing of deaf children. In order to achieve this goal, both quantitative and qualitative research was done. The comparison of the writing of deaf and hearing children relies on quantitative research while the recommendations are based on qualitative analysis.

The dissertation is divided into seven chapters. The first chapter discusses the problem, the significance of the research, the purpose of the study, the background to the problem and the theoretical framework. This chapter indicates the prevalence of deafness worldwide and in South Africa and its negative impact on the writing abilities of children. The second chapter provides a literature review on the theory behind reading and writing, with specific emphasis on emergent literacy and its relevance to the language acquisition and print language learning of deaf children. Another aspect of this chapter is the effect of different aspects of deafness on language acquisition and learning. The chapter also highlights the challenges for deaf children in South Africa and debates regarding the language of instruction that should be used to teach deaf children writing/reading, as well as arguments concerning bottom-up, top-down, and interactive approaches to writing. The third chapter provides the overall philosophical framework for the quantitative and qualitative research as well as the methodology used for the qualitative research. This is followed by the results of the quantitative research and a discussion of these results in Chapter 4. The fifth chapter is in the form of a second literature review that contains recommendations for improving the writing of deaf children. Following this, in Chapter 6, is a discussion of some of the theory behind interview interaction, as well as an analysis of how to develop a valid study. The researcher also sets out the interview structure. The seventh chapter contains a discussion of the findings of the interview to see if they confirm the findings in Chapter 5, as well as overall conclusions about assisting deaf children with their writing, a reflection on the study as a whole and suggestions for future research.

This study argues that in order for deaf children in South Africa to develop their writing, immediate government assistance is necessary in order to implement countrywide newborn hearing screening, followed by medical and/or language-based

intervention to minimise the impact of deafness on the language and writing abilities of deaf children. This is an essential foundation from which parents and teachers can build and play a key role in helping their children reach age-appropriate levels of written English.

KEY WORDS

Deaf/deaf

Emergent literacy

Critical age hypothesis

Sign language

Sign bilingualism

Natural oralism

Interactive approaches

Universal newborn hearing screening

Intervention

Drafting

ABBREVIATIONS

Each time an abbreviation is mentioned for the first time in a chapter, the full form is given, followed by the abbreviation. In the rest of that chapter, the abbreviation only is used. In a new chapter using the same abbreviation, the full form is given again the first time it appears.

ABR: Auditory brainstem response.
ASHA: American Speech-Language-Hearing Association
ASL: American Sign Language
BRT: Bus Rapid Transit
BSL: British Sign Language
CAPDs: Central auditory processing disorders
CDC: Centers for Disease Control and Prevention
DEAFSA: Deaf Federation of South Africa
EHDI: Early Hearing Detection and Intervention
ESL: English second-language
FET: Further Education and Training
H-D: Hypothetico-deductive
JCIH: Joint Committee on Infant Hearing
LIS: Italian Sign Language (Lingua Italiana dei Segni)
NGT: Nederlandse Gebarentaal (Sign Language of the Dutch)
NSL: Norwegian Sign Language
OAE: Oto-acoustic emissions
OSDP: Office of the Status of Disabled People
PCEHL: Permanent congenital and early-onset hearing loss
SAIRR: South African Institute of Race Relations
SASL: South African Sign Language
SAWL: Structural Analysis of Written Language
SSD: Sign-Supported Dutch
UNHS: Universal newborn hearing screening
WHA: World Health Assembly
WHO: World Health Organization

CHAPTER 1 INTRODUCTION

1.6 INTRODUCTORY REMARKS

Since the advent of democracy in 1994, there has been a growing concern for the welfare of minorities, such as those with disabilities, in South Africa. This is clear from the Constitution of the Republic of South Africa (2003, 1247), which states that neither the state, nor any person, may "unfairly discriminate directly or indirectly against anyone" on grounds of disability. While the desire for equality has resulted in a great deal of talk, in reality, the prospects of those with disabilities still often remain grim. This is particularly true of many deaf people, who, owing to a lack of early intervention, often face a lifetime of trying to "catch up" because of the linguistic disadvantages of their early years. For instance, in 2008, the Grade 12 class at St. Thomas School for the Deaf in King William's Town obtained a 0% matric pass rate (Matomela 2008, par. 9).

Because the writing levels that children develop while at school will determine their academic and career potential after completing their education, it is necessary to establish the extent of the challenges facing deaf children. This study focuses specifically on the Nelson Mandela Metropole in the Eastern Cape and aims to determine the written English level of deaf children. The reasons for focusing on English, on deafness, and on children are discussed below. Thereafter, Chapter 1 contains a discussion of the problem, the significance of the research, the purpose of the study, the background to the problem and the theoretical framework.

1.1.1 Focus on English

First, the research project focuses on the acquisition of English because of the important role this language plays in South Africa as a language of intranational communication. That is, in this country "of eleven official languages, where about 92% of the 44 million people have a mother tongue other than English . . . English seems to be functioning as an unofficial language of wider communication" (Puhl 1997, 2). English is also important for South Africans who interact with those beyond the borders of their home country because this language is seen, albeit arguably, by many as "the world standard language" (Hasman 2000, 2). For instance, Strevens (1982, 62) notes that English

serves in many countries in addition to or instead of local languages as a vehicle for science, for the mass media (press, radio, television), and some kinds of international entertainment, and to some extent for literature."

1.1.2 Focus on deaf children

Second, the motivation behind focusing on deaf learners is threefold. One reason is the lack of research on the written English abilities of deaf learners in the Nelson Mandela Metropole. The fact that there are several schools catering for deaf learners makes this geographical area an ideal focus of such research. Another reason is that the researcher is deaf and therefore has a personal interest in the topic. In addition, the researcher would like to make a contribution to a field needing more research, in an attempt to help narrow the gap between the ideals of the South African Constitution and the reality, in which an entire grade of deaf matric learners can fail to pass their final yeat at school.

1.1.3 Focus on children

Third, the focus is on children rather than on adults as many linguists, basing their argument on the critical period hypothesis (Fromkin and Rodman 1993, 413), believe that children find it easier to learn language. In addition, it is necessary to focus on children as they need to be able to use English at school. English is taught at all schools in South Africa, and in the majority of them it is the language of instruction, according to van der Walt and van Rooy (2002, 115).

1.7 THE PROBLEM

The problem that this research addresses is determining whether there is a difference between the written English of hearing children and the written English of deaf children in the Nelson Mandela Metropole. There is a great deal of literature on the developmental delays that deaf children experience in learning to read and/or write (Knight and Swanwick 2002, 78). Without a solid grounding in reading and writing, the post-school or post-Grade 12 prospects of deaf children are considerably fewer than those of hearing children. This is particularly worrying in the Eastern Cape, which

already has overall low education levels. For instance, in 2008, the Eastern Cape achieved the lowest pass rate in the whole of South Africa (Hollands 2008, par. 5), although admittedly, many Port Elizabeth schools did manage to obtain 100% pass rates (Matomela 2008, par. 1).

1.8 SIGNIFICANCE OF THE RESEARCH

The aim of the research is to provide further insight into the writing abilities of deaf children by answering the following research question:

- Are there significant differences between the written English of deaf children and the written English of hearing children in the Nelson Mandela Metropole?

In order to answer this question, the focus of this dissertation is a comparison of the written English of two groups of learners in the Nelson Mandela Metropole: (1) deaf children at schools aimed to assist deaf children or children with learning difficulties and (2) hearing children. Arising from this question are more specific questions, drawing on the research of van der Walt and Hattingh (2007, 19):

- What are the differences, in terms of fluency frequencies and fluency ratios, between the written English of the two groups?
- What are the differences, in terms of accuracy frequencies and accuracy ratios, between the written English of the two groups?

Should the answers to the above questions indicate that the writing abilities of deaf children are significantly lower than the writing abilities of hearing children, the researcher hopes that this research will raise awareness of the educational challenges facing deaf children in South Africa. Furthermore, the following research question will then also be relevant:

- What recommendations can be made, based on the findings of the research project, for improving the written English of deaf children?

The researcher hopes that these recommendations will result in further studies to test their effectiveness. This in turn could make a meaningful difference in the lives of deaf children, many of whom otherwise might have little hope of a reasonable standard of living as adults.

1.9 PURPOSE OF THE STUDY

Based on the above research questions, the aim of this study is to discover whether there is a significant difference between the writing of deaf children and the writing of hearing children in the Nelson Mandela Metropole. Research in both developed countries and in other areas of South Africa indicates the high probability of significant differences. If there are significant differences, a secondary aim of the study is to consider possible recommendations to reduce the significance of this gap. Investigation of these possibilities in the future could provide valuable information on their effectiveness. In order to achieve the first aim, the researcher obtained essays from deaf and hearing children and analysed the number and length of T-units, which are independent main clauses, and error-free T-units. The validity of this approach in revealing writing ability is evident from previous research, such as that of van der Walt and Hattingh (2007). Further details on T-units are provided under the "Methodology" section.

1.10 BACKGROUND TO THE PROBLEM

In order to understand the background to the possible problem of the writing abilities of deaf children at schools in the Nelson Mandela Metropole, the following sections provide background information. The first section discusses the prevalence of deafness globally and in South Africa to illustrate that this is a common condition. The second section focuses on different views on deafness by discussing the medical term "deaf" and the cultural term "Deaf." Thereafter is a discussion of the impact of deafness on reading/writing ability and previous South African research on deafness, both at the University of Port Elizabeth/Nelson Mandela Metropolitan University and elsewhere in the country. While there has been little relevant prior research at the University of Port Elizabeth/Nelson Mandela Metropolitan University, research at other tertiary

institutions in South Africa suggests that deaf children have a serious problem with writing.

1.5.1 The number of deaf people worldwide and in South Africa

Deafness is a frequently occurring condition. According to the World Health Organization (WHO) (2009, 35), "Hearing loss, visual impairment and mental disorders are the most common causes of disability worldwide." Worldwide, based on 2005 estimates from the WHO, 278 million people live with moderate to profound bilateral deafness (WHO 2006a, under "Facts About Hearing Impairment and Deafness"). The majority of people (80%) with hearing difficulties in one or both ears, ranging from mild hearing loss to complete absence of hearing, are residents of low- and middle-income countries (WHO 2006a, under "Facts About Hearing Impairment and Deafness").

In South Africa, according to Statistics South Africa (2005, 1) 2 255 982 people in South Africa have a disability, of whom 20% have a hearing disability. However, there is some doubt regarding the accuracy of these figures as, according to Statistics South Africa (2005, 8), in some instances a disability was not recorded, possibly because of misunderstanding about the meaning of the term *disability*. According to Swanepoel et al. (2009, 784), about 6116 babies every year or 17 per day "will be born with or acquire permanent bilateral hearing loss in the first few weeks of life with approximately 92% born in the public health sector."

1.5.2 Definitions of deaf/Deaf

The words "deaf" and the capitalized "Deaf" refer to two different views of hearing loss. An awareness of these terms is important as they are linked to different models related to teaching deaf children, which are discussed in the literature review. While "deaf" is a medical term, "Deaf" refers to a culture.

First, the term "deaf" generally refers to the *medical condition* of hearing loss. For example, Ladd (2003, 33) describes the deaf as those "people whose hearing has become impaired later in life. . . . A much smaller number who suffer total or near total

loss of hearing during their working lives are described as ‘deafened’.” Being “deaf” need not only refer to those who become deaf later in life though. For instance, Luterman (2007, 43) uses the term when referring to children with severe hearing loss who will benefit from cochlear implants. In terms of this dissertation, the word is taken to mean the medical condition of hearing loss, whatever the degree of deafness or stage at which the hearing loss developed.

While “deaf” is a medical term, being “Deaf” is about being part of a cultural group. Those who are Deaf use sign language. As Ladd (2003, 33) explains, those who are Deaf “grow up with ‘severe’ deafness as their everyday childhood reality . . . [and] experience a fundamental language barrier standing between them and meaningful relationships with hearing children.”

While those who are Deaf are also medically deaf, being Deaf is therefore far more than simply having a hearing loss. Scheetz (1993, 20) identifies several requirements necessary for someone to be part of the Deaf community. First, the person must want to identify with the Deaf culture. Second, the person should be able to identify with common experiences of other members of this culture. Third, a person desiring to become part of the Deaf community should “share a similar communication base” (Scheetz 1993, 20) to enable the transfer of ideas between members. This means that, technically, a hearing child with a Deaf parent might acquire sign language and therefore not be medically deaf while simultaneously being culturally Deaf.

1.5.5 Deaf children and reading/writing

Worldwide, it is common knowledge that deaf children struggle with language and reading/writing although the fairly recent development of equipment such as digital hearing aids and cochlear implants has made a significant difference to those who have access to such technology. However, these developments too have introduced many challenges, notably the ongoing battle between those advocating the teaching of spoken language and those recommending that deaf children learn sign language. For example, according to Woll (1998, 58), “how normal development can be best achieved, and which language or languages should be learnt, is a continuing source of controversy.”

Another challenge is that in order for the acquisition of either spoken language or sign language to be most successful, detection and intervention for the deaf child needs to happen as early as possible (cf. Marschark 1993, 17; Pauw 2002, abstract; Schröder 2004, abstract). Many developed countries, such as the United States, have made strides towards early detection and intervention with universal newborn hearing screening (UNHS) (Downs 2007, 161).

However, in South Africa, both a developed and a developing country, advanced technology, such as cochlear implants, is not available to many, and UNHS is still not a reality countrywide. Instead of deafness being identified by screening, in South Africa, as Swanepoel and Delport et al. (2007, 3) indicate, most identification of hearing loss happens passively when parents become concerned that there is something wrong with their child. In addition, deafness may go undetected for some considerable time. According to the Deaf Federation of South Africa (DEAFSA) (2009, under "Deaf Education"), in South Africa, sometimes deafness is only diagnosed when the child is between four and eight. As a child develops language best in the first two years of life, late diagnosis means that many Deaf children start Grade R with "little or no language" and the "average Deaf school-leaver leaves school with a reading age of 8" (DEAFSA 2009, under "Deaf Education"). Consequently, three quarters of Deaf people are "functionally illiterate" and 70% do not have work (DEAFSA 2009, under "Deaf Education").

1.5.6 Previous research in South Africa on deafness

There is relatively little research on deafness available from the Nelson Mandela Metropolitan Univesity. Markman (1992) writes on "Stress and Coping in Families with Hearing Impaired Children" while the research of Schröder (2004) is an exploration and description of the developmental profile of deaf children using the Revised Extended Griffiths Scales. An M.Ed. by Phillips (1995) discusses the production of an educational support model for children with hearing loss. There does not appear to be any research focusing specifically on the *writing* of deaf children by any student from the University of Port Elizabeth/NMMU.

More applicable research is found in other higher education institutions, like a master's degree by Moodley (2003). Moodley analyses the written English of three groups of deaf learners: five learners from the foundation phase, five learners from the intermediate phase and five learners from the senior phase. Most of the learners had severe or profound hearing loss. An across-phases analysis of the mistakes found in the work of intermediate (Grade 7) and senior (Grade 12) phase learners provided an indication of errors:

> [A] common error across all the students was the missing language components in sentences, reversal [of elements] in the sentences and in the use of pronouns. Language components that were missing from intermediate and senior phase students' sentences included determiners, auxiliary verbs, prepositions and objects.
>
> (Moodley 2003, 54)

Other research also highlights the difficulties that deaf children have with writing. For instance, Sinoff (1993) compares the narratives of deaf children to those of hearing children and concludes that the coherence in the writing by the deaf children in the study is significantly less than that of the hearing children (Sinoff 1993, abstract). In addition, the narratives by deaf children contain "more, but shorter T-units than those of their hearing counterparts, reflecting simple syntax structure" (Sinoff 1993, 211). These studies indicate that there is a need to investigate the writing abilities of deaf children in the Nelson Mandela Metropole.

1.6 THEORETICAL FRAMEWORK

The theoretical framework used by this study is the psycholinguistic approach. The field of psycholinguistics is a wide one, as explained by Johnson and Johnson (1998, 267):

[**P]sycholinguistics** is concerned broadly with how linguistic knowledge is acquired (developmental psycholinguistics), how it is put to use in comprehending and producing utterances (language processing) and how it can be impaired by brain injury (aphasia).

Psycholinguistics is a highly appropriate framework for this dissertation because first- and second-language acquisition are important areas of study in psycholinguistics.

Within the field of psycholinguistics, the notion of an *interlanguage*, a term coined by Selinker in 1972, is most relevant to this study. An interlanguage is "the variable learner systems of increasing complexity that develop during the process of acquiring a second language" (Romaine 2003, 410). Gass and Selinker (1994, 11) also refer to this commonly acknowledged phenomenon, the interlanguage:

> The basic assumption in SLA [Second Language Acquisition] research is that learners create a language system, known as an *interlanguage* [IL] . . . composed of numerous elements, not the least of which are elements from the NL [Native Language] and the TL [Target Language].

This notion of an interlanguage is applicable to deaf children in the study whose first language is not English. However, a previous form of the concept is also appropriate to deaf English first-language learners. This earlier type of interlanguage, referred to as the "independent grammars assumption", is described by Johnson and Johnson (1998, 175):

> The 'independent grammars assumption', derived from Chomsky's work of the early 1960s by L1 researchers . . . insisted that at a particular moment a child had a grammar that was not just an imitation of the adult grammar but had a system of its own.

In terms of this definition, the English of all children is some form of interlanguage, and it is the specific interlanguage of deaf children, whether first- or second-language English learners, that will be the subject of this research project. Admittedly, seeing first-language children's English as an interlanguage is an assumption based on *perception* rather than a theory, according to Johnson and Johnson (1998, 175) because in their opinion, "it depends on your point of view whether you think of learners' grammars as independent [of that of adults] or not" (Johnson and Johnson 1998, 175). For the purposes of this dissertation, the researcher believes that because certain aspects of the written English of many deaf learners have frequently been shown to be far below those of hearing children (Kretschmer 1989, 54 ; Lewis 1998, 101), it is

justifiable to refer to the written English of all deaf learners, whether they are first- or second-language learners, as a form of interlanguage. In educational terms, the target grammar is that of Standard English. As noted by Newfield et al. (2003, 61), "in mainstream classrooms . . . written standard English is the dominant mode and language through which students' meanings are read and assessed."

More specifically, within the framework of psycholinguistics, the researcher will also discuss the acquisition and development of language and writing from the perspective of (1) emergent literacy and (2) the critical period hypothesis and advocate (3) interactive approaches to writing. In addition, she will relate her discussion of deaf children's language and writing to (4) two models of deafness, the medical and the linguistic/cultural model. While she favours the medical model, she acknowledges the role of the latter in a South African context. The above four points will form the bulk of the literature review

1.7 WHAT THIS STUDY PROPOSES

This study proposes that the writing abilities of deaf children are significantly lower than those of hearing children and that it is the responsibility of parents/guardians, the government, and teachers to ensure that these children have the best opportunity possible to minimize the impact of their deafness on their ability to learn to write English fluently.

In order to research this proposal, the researcher undertook the following study:

1.7.1 Study Outline

Chapter 1 discusses the problem, significance of the research, the purpose of the study, the background to the problem and the theoretical framework.

Chapter 2 provides a literature review on theories of reading/writing development, particularly emergent literacy and deafness and its relation to language. In addition, the chapter discusses challenges facing deaf children in South Africa, different modes of

communication used to teach deaf children language and three approaches to reading and writing.

Chapter 3 describes the philosophical framework of the overall study and the methodology used for the quantitative research on children's writing

Chapter 4 contains the results of the research and a discussion of these findings.

Chapter 5 provides a second literature review containing recommendations to improve the writing of deaf children.

Chapter 6 describes the theory behind interview interaction and contains a discussion of validity and ethics with relation to interviewing. The sampling method and interviewees are discussed. The chapter ends with the layout of the interview structure.

Chapter 7 discusses the recommendations/conclusions derived from the qualitative research (interviews/literature review).

1.8 SUMMARY

Chapter 1 explains the reasons for focusing on the written English of deaf children, followed by a discussion of the research problem, the significance of the research and the purpose of the study. Thereafter the researcher provides background information on deaf children and their writing by discussing the prevalence of deafness globally and in South Africa, by differentiating between the terms "deaf" and "Deaf," by looking at the challenges that deaf children face in their writing, and by referring to previous research on deafness at Nelson Mandela Metropolitan University (NMMU) and elsewhere. Finally, the chapter contains the theoretical framework of the paper and what the study proposes.

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 2 contains a literature review on the theory behind literacy, deafness, writing and the teaching of writing. Before discussing the literacy of deaf children, clarification of this term is necessary, as well as a discussion of different theories of the development of reading and writing, with a focus on emergent literacy. The chapter then discusses the relevance of emergent literacy and the critical period hypothesis for deaf children and their acquisition and learning of language. Thereafter follows a discussion of the impact of different aspects of deafness on language acquisition and learning, namely when deafness began, the severity of the deafness and whether it was unilateral/bilateral as well as types of hearing loss. Having determined that deafness can have a profound impact on a deaf child's language acquisition and learning, the researcher discusses the value of effective writing and challenges which South African deaf children are likely to face with regard to language acquisition and development. The chapter then ends by looking at the controversy regarding the best language of instruction via which to teach deaf children writing/reading and arguments regarding bottom-up, top-down and interactive approaches to writing.

2.2 LITERACY

Literacy is a complex term which can refer to reading, to writing, to both reading and writing or to far broader concepts. The common understanding of literacy, however, is that it means reading and/or writing. In this sense of the word, literacy is seen as "skills." According to Moss (2002, 549-550), "the predominant traditions of literacy study in . . . psycholinguistics . . . treat reading and writing as a set of universal cognitive skills that can be adequately specified in the abstract and then transported wholesale from one site to another."

A more extended meaning of "literacy" involves an ability to use Discourses. Discourses, explains Gee (2001, 719), are like "identity kits" because they are all the "ways of talking, listening, writing, reading, acting, interacting, believing, valuing, and

feeling (and using various objects, symbols, images, tools, and technologies)" that are used by someone to enact "meaningful socially situated identities and activities." For instance, someone whose Discourse was that of an English teacher would use different language (such as "verb" and "noun") and objects (such as chalk) from a tennis player, who might use words such as "ace" and "deuce" and objects such as a tennis racquet.

Discourses can be divided into two categories. These are primary and secondary Discourses (Gee 1996, p. 137). Lankshear (1999, under "A Sociocultural Definition of Literacy"), who explains these two terms of Gee, states that a primary Discourse is the first Discourse people learn as children: "how we learn to do and be . . . within our family (or face to face intimate) group during our early life. It . . . comprises our first notions of who 'people like us' are, and what 'people like us' do, think, value, and so on." On the other hand, secondary Discourses happen later when children and adults become involved in "outside groups and institutions," such as church (Lankshear 1999, under "A Sociocultural Definition of Literacy"). To return to the connection between literacy and Discourses, literacy, according to Gee, means that a person has "mastery" (Gee 1996, 143) of a secondary Discourse. Just as there are many different secondary Discourses, it follows that there must be many literacies. In order to distinguish between a psycholinguistic definition of literacy and the definition of literacies in terms of Discourse, the latter will be termed Discourse literacies. It is obvious that literacy cannot take place in a vacuum and that children need "mastery" (Gee 1996, 143) in Discourse literacies in order to be effective readers and writers.

2.2.1 Theories of reading and writing

In order to assist deaf children with their writing, there needs to be clarity on when writing and reading begin. Many teachers have taken a "readiness" perspective on reading and writing. According to Wray and Medwell (1991, 64), this view says that children arrive at a specific stage in their lives when they are "physically, emotionally and cognitively mature" enough to learn reading and writing. This perspective can be traced back to the 1920s (Lipson and Wixson 1991, 119). In 1931, Morphett and Washburne provided further support for this view and gave a mental age of 6.6 years as a threshold time for reading (Morphett and Washburne 1931, 500). In terms of writing, a few decades prior to the 21st century, "many 'progressive' or 'child-centred' nursery

professionals would not write for children or allow writing and labelling around the nursery environment" (Whitehead 2004, 228).

Children who were not ready to write or read would receive training. In place of direct teaching, teachers gave pre-reading and pre-writing exercises so that they would arrive at the stage of being ready to read or write (Wray and Medwell 1991, 64). The extent to which some schools embraced such pre-readiness training is illustrated in a story told by Wray and Medwell (1991, 64) about a head teacher who allegedly said to a parent whose child was soon to begin school, "What a pity Emma can already read. She will miss out on all the lovely pre-reading games our children play."

However, the readiness view does not hold water when tested, either empirically or anecdotally (Lipson and Wixson 1991, 119). The story of Emma illustrates that many children learn some degree of reading and writing prior to the stage when they are expected to be "ready." For example, a *Weekend Post* article by de Jager (2008, 1) contains an article on 4-year-old Anesipho Mabija, who, according to his mother, began reading at age two. The fact that most children in literate societies "pick up a great deal of literate behaviour from very early in their lives" (Wray and Medwell 1991, 65) has led researchers to consider another way of looking at the development of reading and writing, emergent literacy, a perspective which rejects the distinction between pre-reading and "real" reading (Whitehurst and Lonigan 1998, 848) and pre-writing and "real" writing.

2.2.2 Emergent literacy

According to the emergent literacy view, reading, writing and oral language are processes that develop in children very early and that are interdependent. This is expressed in an article by Whitehurst and Lonigan (1998, 849), who define emergent literacy as follows: "The term 'emergent literacy' is used to denote the idea that the acquisition of literacy is best conceptualized as a developmental continuum, with its origins early in the life of a child, rather than an all-or-none phenomenon that begins when children start school" (Whitehurst and Lonigan 1998, 848). Instances of very early emergent literacy behaviour are evident from research on infants and foetuses. For instance, the article, "Babies Cry in Language Parents Speak—Study," in "La Femme"

in *The Herald* (2009, 9) reports on research by an international team (Mampe et al. 2009, 1994-1997) that has found that babies begin acquiring language before birth and that they cry using melodies specific to their home languages. In addition, Whitehead (2004, 205) discusses how, from an early age, babies "are 'reading' the eye contacts, faces, gestures and postures of those significant persons who care for them" using techniques such as "scanning, focusing, anticipating and predicting responses and making contacts."

Very early writing probably finds its roots in patterns which emerge soon after birth. As explained by Whitehead (2004, 170), in the first few weeks after birth, eating, sleeping and waking "form regular and predictable patterns" which are the baby's first experiences of "early representation." In terms of actual writing, according to those supporting emergent literacy, the development of writing takes place in stages. The document *Stages of Children's Writing*, an adaptation of Project Elipss (n.d.), identifies the following stages of children's writing, as summarised below:

1. Scribbling: Children may assign these scribbles meaning e.g., a child states that a scribble spells someone's name.
2. Mock handwriting or wavy scribble: Children copy the cursive writing of adults.
3. Mock letters: Children try to draw letters, which are similar to the letters of their home language.
4. Conventional letters: These are recognisable letters, generally taken from the child's name or family names and frequently written in a string on a page.
5. Invented spelling: Children put letters together although these do not form "real" words.
6. Approximated spelling: Children link sounds to letters, approximating the spellings of "real" words. They first spell words by using the first consonant letter of the word, then they write the first and last letters, and then move on to writing words containing first, middle and end letter sounds.
7. Conventional spelling: Children produce increasingly recognisable spelling.

Important to note is that these stages do not take place linearly. As indicated by Whitehead (2004, 170), all these stages, "once established, continue to exist and interact, affecting and supporting each other."

2.2.3 Emergent literacy and deaf children

In summary, emergent literacy is the simultaneous development of oral language, reading, and writing from a very young age. A concern is that, in the case of deaf children, they will not receive full exposure to sound, which impacts on their development and understanding of spoken language. This in turn affects the child's awareness of the world around him or her as much communication and learning are conveyed through speech and sound, even in utero, as seen from the study of Mampe et al. (2009, 1994-1997).

Furthermore, as spoken/heard language and writing and reading are interlinked, according to the emergent literacy view, when deafness limits spoken/heard language, it in turn can affect the development of a child's reading and writing. This opinion is supported by research showing the link between oral language and reading and writing. For instance, according to Lipson and Wixson (1991, 129), being a competent speaker of a language benefits reading for the following reasons:

1. In learning to talk, children develop (or demonstrate) a number of general cognitive strategies for learning.
2. In learning to talk (and listen), children acquire much that they will use to aid them in bringing meaning to print: vocabulary, understanding of syntax, the ways in which meaning is carried in language structures, and alternative structures for communicating similar and dissimilar ideas.
3. Children's oral language abilities permit them to use prediction and hypothesis testing to support their initial reading attempts.

Many of these benefits are also clearly relevant to written language, such as the development of vocabulary and a grasp of syntax. Thus, if a child does not acquire a spoken language, it may be very difficult for him or her to develop reading and writing abilities sufficiently. As discussed later, those advocating sign language would dispute the importance of *spoken language* in the development of reading and writing, arguing that sign language could replace verbal language. While this is a somewhat controversial issue, one point on which both sides agree is the importance of strong

language skills for fostering writing and reading. For instance, MacSweeney (1998, 26) notes that “we cannot say whether sign language competence would be as good a predictor of academic achievement as verbal IQ. However, we do know that deaf children of deaf parents are often held up as examples of what deaf children can potentially achieve. . . . [O]ne of the primary reasons appears to be a rich language background, whether in sign or speech.”

2.2.4 Critical period hypothesis

Regardless of what language a deaf child uses, acquiring it too late impacts on his or her development of that language, in turn affecting his or her reading and writing. According to the critical period hypothesis, language acquisition happens most effectively at a young age. The father of this theory is Lennenberg (1967, 176), who notes about puberty that “automatic acquisition from mere exposure to a given language seems to disappear after this age, and foreign languages have to be taught and learned through a conscious and labored effort.” Other authors, such as Mayberry and Lock (2003) have supported the findings of Lennenberg that early language acquisition has a significant impact on later language learning. In their study of deaf and hearing adults, Mayberry and Lock (2003, 369) conclude that lack of early language acquisition “seriously compromises development of the ability to learn any language throughout life” (Mayberry and Lock 2003, 382). Delage and Tuller (2007, 1301) also argue that there is “strong psycholinguistic and neurolinguistic evidence” of a critical language acquisition period.

2.3 DEAFNESS AND LANGUAGE

There are various aspects of deafness that can affect a child’s language acquisition and learning. Key elements are the time of onset of deafness, the degree of hearing loss and whether it is unilateral or bilateral, and types of hearing loss.

2.3.1 Time of onset of deafness

The time when the hearing loss occurs can also have an impact. Hearing loss which occurs before a child has learnt to speak is called prelingual deafness. Reasons for

prelingual loss are varied and the deafness might be genetic or have arisen from complications while the mother was pregnant: For instance, conditions such as rubella, herpes, and toxoplasmosis or ototoxic drugs can result in a child's being born deaf ("Deaf Child Worldwide" 2008, under "Causes Before Birth (Pre-Natal Causes)"

Hearing loss which occurs after a child has learnt language is referred to as postlingual. It also has a range of causes, such as genetic illnesses like Alport's syndrome or trauma to the bone housing the inner ear, which could harm the cochlear (Stewart and Adams 1997, 92, 95). There are also cases in which postlingual hearing loss occurs for which no cause can be found (Gallaudet Research Institute 2006, 2). Based on the emergent literacy view, a child who suffers from postlingual deafness has an educational advantage over a prelingually deaf child (who does not acquire sign language) because of his or her exposure to language prior to the onset of deafness.

2.3.2 Degrees of hearing loss and unilateral/bilateral hearing loss

In addition to the age of deafness, factors that can affect children's language development are the degree of hearing loss and whether the hearing loss is unilateral or bilateral. There are different degrees of hearing loss, from slight hearing loss, which falls within normal range, to profound. The South African Association of Audiologists (2007, under "Degree of Hearing Loss") provides the list of ranges of hearing in decibels (dB):

0 - 20 dB	normal hearing
21-40 dB	mild hearing loss
41-55 dB	moderate hearing loss
56 -70 dB	moderate to severe hearing loss
71 -90 dB	severe hearing loss
91 dB plus	profound hearing loss

These degrees of deafness can occur in one ear (unilateral) or both ears (bilateral) and if the loss occurs bilaterally, it may not be the same in both ears. The type of loss can have varying effects on children's ability to learn language. While a more severe, bilateral

hearing loss will limit the child's natural exposure to spoken language, a milder or unilateral hearing loss can also cause language problems, particularly if they are only identified at a late stage. McKay (2006, 299), drawing on a range of sources, notes that children with unilateral hearing loss are "at higher risk for educational, speech-language and social-emotional difficulties than their peers with normal hearing."

2.3.3 Types of hearing loss

While unilateral and bilateral deafness can impact on language, there are also three main categories of hearing loss, which can also have varying effects on language acquisition. These are conductive hearing loss, sensorineural hearing loss and a mixture of the two.

2.3.3.1 Conductive hearing loss and language development

A conductive loss refers to hearing difficulties occurring in the outer or middle ear. Examples of some conditions in which conductive hearing loss is a feature are Treacher Collins syndrome, Pierre Robin syndrome, osteogenesis imperfecta, Down's syndrome, middle ear infection and otitis media with effusion (glue ear) (Stewart and Adams 1997, 85-88). While there is much controversy regarding the actual impact of conductive hearing loss on language, those who accept the critical period hypothesis argue that conductive deafness can affect children's language because of "reduced and inconsistent auditory input" (Stewart and Adams 1997, 89). The effect of conductive loss may be evident in difficulties in receptive language, auditory discrimination, semantics and expressive language (Stewart and Adams 1997, 90-91).

2.3.3.2 Sensorineural hearing loss

Sensorineural hearing loss occurs further inside the ear. It takes places in the inner ear or else on the "nerve pathway" running between the inner ear and the brain stem (Scheetz 1993, 38). Examples of sensorineural loss are the hearing loss resulting from Ménière's syndrome or genetic deafness. According to Scheetz (1993, 38-39), sensorineural hearing loss "can be characterized by an individual's inability to perceive

sounds at varying frequencies with the same level of intensity" and it is often the high frequencies that people with this type of hearing loss cannot hear.

Children who have sensorineural hearing loss may experience various difficulties with language. Stewart and Adams (1997, 97-102) identify four areas of language in which children with such hearing loss may find difficulty. First, these children may struggle to understand or to be understood by adults. In addition, they may experience difficulties with semantics. Third, deaf children could also find phonology challenging, and fourth, they may struggle with syntax. With regard to syntax, Stewart and Adams (1997, 99) note that "at phrase and clause level there is a decreased use of advanced level combinations, i.e. a shorter mean sentence length. In summary, there is a reduced use of complex sentences and sentence connectivity." Further research by Klecan-Aker and Blondeau (1990, 275-282) supports these syntactical findings related to clauses. Klecan-Aker and Blondeau's study focuses on the writing of eight learners with severe to profound hearing loss, between the ages of 10 years, 10 months and 18 years, 1 month, and their learning via spoken language. The authors conclude that although deaf children wrote T-units which were "normal" in length, they wrote shorter T-units (defined in Chapter 1), containing fewer words and clauses than the writing of hearing children (Klecan-Aker and Blondeau 1990, 275, 279).

2.3.4 Other causes of hearing loss

In addition to medical causes of deafness, as occur in the cases of conductive and sensorineural hearing loss, there are other, perhaps less common reasons for deafness, namely psychogenic deafness and central auditory processing disorders (CAPDs).

According to Dancer (2009, under "Classification and Detection"), psychogenic hearing loss, "originates in the mind of an individual and is thereby psychological rather than physiological in nature." The second cause, CAPD, is a rather hazy concept, as well as a somewhat controversial one: According to the American Speech-Language-Hearing Association (ASHA) (2005, under "Definition of (C)APD"), this term "refers to difficulties in the perceptual processing of auditory information in the CNS."

In this research project, the study will focus only on the writing of children who have sensorineural deafness, conductive hearing loss, or a combination of these two. To extend the study into the writing of children with psychogenic deafness or CAPD would make the work insufficiently focused.

2.4 EFFECTIVE WRITING: IMPORTANCE AND CHALLENGES

The above sections discuss challenges deaf children may face in acquiring language and learning to read and write as well as reasons for these challenges, related to types of deafness and theories of emergent literacy and the critical period hypothesis. The following discuss why it is in fact important for deaf children to write effectively and what factors in South Africa may make writing difficult for deaf children.

2.4.1 Writing: The importance of developing effective writing

Whether deaf children use sign or spoken language, strong writing skills are essential. This is emphasized by Luckner and Muir (2002, 27-28) in relation to deaf children in America:

Like all students in school today, students who are deaf must gain the skills to acquire, understand, use, and communicate information accurately, efficiently, and independently. Our society is experiencing an explosion in both information and technology. . . . [T]he educational, social, and economic values of reading and writing are more important than ever before.

People who either cannot write or struggle to write often carry the label “uneducated.” Along with the prejudices inherent in this attitude, this discriminatory dismissal reflects the importance that society places on the ability to write well. The attitude is particularly evident in the educational institutions in which reading and writing are taught. As Moodley (2003, 3) notes, in “both general education systems as well as in deaf education there is a huge focus on literacy skills (i.e., reading and writing) since these are skills necessary for the development of academic skills and are the means of acquiring most other aspects of academic education.”

2.4.2 Writing: Challenges for South Africa

While writing skills are essential for deaf children, they are often unattainable. Deaf children face challenges in South Africa that may be less prevalent in Western countries. Some of these, originally suggested by van Dijk (2003, 21-27) are education levels in South Africa, identification of deaf children, HIV/AIDS and bilingualism/multilingualism. Other challenges are discussed in Chapter 5.

First, a major challenge is the poor level of education overall of many South Africans. One reason for this is the former racially based system of government, apartheid. As explained by Van Dijk (2003, 3), because apartheid divided education along colour lines, schools for deaf White children "enjoyed much more governmental assistance such as financial, resources, educational support, et cetera, than schools for other races." Thus, prior to democracy in 1994, special education did little for the majority of deaf South Africans as the best teaching and resources went to white children while the majority of children with disabilities were either unable to be part of the education system or were "mainstreamed by default" (Education White Paper No 6 2001, 5).

Furthermore, the education system overall did not react to the varying needs of learners, causing "massive numbers" of academic failures (Education White Paper No.6. 2001, 5). To compound the crisis, education for deaf children only became compulsory in 1996 with the new constitution of South Africa and prior to democracy in 1994, the number of deaf children in South African who had never attended school was larger than the number of deaf children who had gone to school at some time (Aarons and Akach 2002, 131).

Currently, education is still insufficient for a large percentage of the population and this is evident in the reading and writing levels of South African citizens. In an article in the *Mail & Guardian Online*, Naledi Pandor, Minister of Education in 2006, states that the number of South Africans who are "totally illiterate" ("Millions in SA" 2006, par. 4) is 4.7 million: they were defined as "totally illiterate" as they had never been to school. In addition, Pandor notes that a further 4,9-million South Africans could be classified as "functionally literate" - meaning they left school prior to Grade 7 ("Millions in SA" 2006, par. 2).

These recent statistics suggest that difficulties with reading and writing in the 21st century in South Africa are not only the result of the previous educational system but are also rooted in the current system. This finding is supported by a media statement from the South African Institute of Race Relations (SAIRR) (2008, par. 5) which indicates that though more learners have access to schooling, the quality of education does not seem to have improved. The number of South Africans gaining entrance to university study exposes the quality of South African secondary education: according to the SAIRR (2008, par. 1-2), the proportion of Grade 12 learners qualified to attend university has decreased by half since the year 1980: The SAIRR's February Fast Facts indicate that in 1980, 31% of 109 807 matrics obtained results enabling university entrance. In 2007, although the number of learners who wrote matric increased to 564 775, the percentage of Grade 12 learners who qualified to study at university has decreased to 15%. The situation is particularly worrying in the Eastern Cape, which has the "lowest university entrance pass rates . . . [of] 9%" (SAIRR 2008, par. 7). Deaf children receiving education within this system are therefore likely to be disadvantaged in comparison with other countries offering higher quality of education.

Another challenge is that many South African children who have hearing loss are not identified as deaf. Van Dijk (2003, 21) refers to statistics from the 1996 South African census and the World Health Organisation to support this contention. According to the 2001 SA Census (Statistics South Africa 2004, 32) less than 1% of the South African population has a hearing loss. This is 9% lower than world-wide estimations (International Federation of Oto-Rhino-Laryngological Societies 2003, 1) and suggests many children have hearing losses of which teachers are not aware. Indeed, according to Swanepoel (2006, 265), "there has been no large-scale study to establish accurate prevalence data for childhood hearing loss or to determine the status of services for the hearing-impaired in South Africa." This, coupled with the poor education levels in South Africa, indicates that many deaf children are struggling to cope in environments not conducive to academic success even under conditions of optimal physical health.

Furthermore, even those who are identified face the challenge of insufficient audiology services. Swanepoel (2006, 264, 265) notes that there are too few professionals with the necessary training to serve the high number of people with hearing loss, particularly

those dependent on public healthcare. As the Eastern Cape is one of the poorest provinces in South Africa (Human Sciences Research Council 2004, 2), the majority of people living here are reliant on this understaffed public health system for their audiological needs. A large number of these people are children: According to Streak et al. (2008, under **"**Child Poverty Profile"**),** it is in the Eastern Cape that "the depth of child poverty is greatest."

AIDS has also had an impact on those living in the Eastern Cape: The South African Department of Health (2007, 4) conducted a study on the estimated number of women using antenatal clinics throughout the provinces of South Africa. According to the study, in 2006, HIV prevalence was estimated at 29% in the Eastern Cape, with a confidence interval of 27.1- 30.4, the fifth highest in the country. This has affected family structures, with many children being orphaned or living in single-parent families. Furthermore, HIV/AIDS, or infections/diseases to which people with HIV/AIDs are susceptible, can lead to hearing loss, as discussed in an article by Bankaitis and Keith (1995, 353-359), "Audiological Changes Associated with HIV Infection." Furthermore, the prevalence of HIV/AIDS in South Africa has also caused a shift in focus away from non-fatal conditions. According to Swanepoel (2006, 265), the high level of HIV/AIDS in South Africa results in a situation which "leads to health priorities that are aimed at saving lives rather than at improving quality of life and neglects an invisible non-life-threatening condition such as hearing loss."

A further challenge in South Africa is that many children are bilingual or multilingual and English is not the first language of the majority of learners. In addition to the difficulties deaf children may experience in acquiring a first language, they then have the additional task of second/third-language acquisition. It may be that this challenge will be easier to tackle now with the advent of cochlear implants. An example is the study by Waltzman et al. (2003, 757-758) on 18 profoundly deaf children with cochlear implants living in homes in which more than one oral language was spoken, to investigate their bilingual oral language growth. According to Walzman et al. (2003, 762), the research results indicate that "some pediatric cochlear implant recipients are capable of oral age-appropriate language skills and the acquisition of multiple spoken languages."

However, many children in South Africa do not have access to cochlear implants (Zeng 2004, 5). In addition, for any child, learning to read and write in a different language can also result in challenges. Grabe (1991, 386-389) identifies three. Although Grabe is referring specifically to reading, these are also applicable to writers:

1. **L2 acquisition and training differences.** Second-language learners and first language learners start the reading process from very different starting points. For example, second language learners generally have smaller oral language vocabularies and incomplete grasp of grammar.
2. **Transfer effects.** As the result of language processing differences, second language students transfer certain elements of their first language into their second language, which can cause problems.
3. **Social contexts.** The way that reading is used in the learner's first language could also affect second language development. For example, the reading ability of a learner in his or her first language might impact on his or her reading level in a second language.

Similarly, writers of a second language would be likely to have smaller oral language vocabularies, to struggle with some aspects of grammar and to transfer aspects of their first language into their second language writing. In addition, if the learner has poor writing ability in his or her home language, as is often the case for deaf children, this in turn could affect his or her writing in a second language.

2.5 LANGUAGE OF INSTRUCTION

Many believe that to improve the writing of deaf children, the language of instruction is an important factor. Two key models of deafness, the medical and the linguistic/cultural models, underlie support of different languages. Within schools, there are three main language approaches to teaching deaf children, oralism (and specifically natural auralism), sign bilingualism or a mixture of the two.

In South Africa, all three have been used, the method often determined by the racial, and racist, policies of apartheid. In the first school for deaf children, though, started in 1863 by Irish Dominicans, all races were accepted and sign language used (Aarons and

Akach 2002, 131). In 1920, spoken language officially became the language of instruction in South African schools in response to the watershed Conference of Milan in 1880 (Aarons and Akach 2002, 131; Penn 1993, 18). However, with the separation of schooling for different races came differences in the language of education. Schools for white children generally used strictly spoken language because the government viewed it as the superior form of language (Aarons and Akach 2002, 131). The schooling of deaf African children was an appalling mess in which children were initially taught in the mother tongue, although there was no clarity as to what language this was for deaf children, by using a combination of a signing system and speech: Later, the language of instruction became English or Afrikaans, in addition to signs, resulting in a form of utterly ineffective Total Communication (Aarons and Akach 2002, 133-134). Perhaps the only benefit of this chaotic system was the children's development of their own sign language (Aarons and Akach 2002, 134).

Later sign language gained in prestige. According to Penn (1993, 21) in the 1990s, sign language became popular, as evident in the use of sign language interpretation for the deaf in theatres. At the same time sign gained prominence, oral teaching gained impetus from the development of technological and medical improvements such as cochlear implants (Penn 1993, 22; van Dijk 2003, 10).

The above history of deaf education in South Africa shows that there has, first of all, been a lack of attempt to provide deaf children, discriminated against under apartheid, with a decent education. In addition, there is no consensus on the best way to teach deaf children. An understanding of the opposing models of deafness will help to understand the reasons for support of different languages of instruction.

2.5.1 Models of deafness

The debate surrounding language of instruction for deaf children is based on two models of deafness, the linguistic/cultural and medical models. Swanwick and Watson (2005, 54) explain that the linguistic/cultural model sees deaf people as a minority group who have their own language, sign language. This group would see themselves as culturally "Deaf," and their form of sign language would vary depending on where they grew up. For instance, deaf people in Britain speak British Sign Language (BSL)

whereas deaf Americans speak American Sign Language (ASL). According to Swanwick and Watson (2005, 54) this model "supports a strong shared identity and a positive view of deafness, which is not driven by audiological distinctions."

In contrast, the medical model focuses on hearing loss as a medical condition. In terms of this model, technology is used to assist the deaf child to acquire spoken language (Swanwick and Watson 2005, 54). Recent technological developments have made this model far more viable. For instance, digital hearing aids (Swanwick and Watson 2005, 54) are a vast improvement on the earlier analogue types. A further development has been cochlear implants, which have made spoken language accessible to the deaf (Luterman 2007, 43). In addition to cochlear implants, universal newborn screening for hearing loss in countries such as the UK (Swanwick and Watson 2005, 54) enables deafness to be determined very early. According to Eichwald (2007, 25), when hearing loss is determined soon after a child is born, this allows for early intervention, such as hearing aids or cochlear implants.

Thus, the linguistic/cultural model supports the use of sign language while the medical model favours speech. A third way to approach this contentious area of language of instruction is to use a combination of language and sign. These three philosophies of communication, Total Communication, sign bilingualism, and oralism/natural auralism), are discussed below:

2.5.2 Total Communication

Total communication is a phrase that was applied to the teaching of deaf children for the first time at the end of the 1960s in America (Baker and Knight 1998, 77). There has been much confusion over what this term means (Baker and Knight 1998, 77-78) because there are a "variety of definitions and a variety of interpretations in practice" (Knight and Swanwick 2002, 23). Broadly, it is a mixture of manual and verbal language. Advocates of Total Communication believe that exposing children to "visuo-spatial language as well as auditory language" (Connor et al. 2000, 1186) will improve children's academic performance. Many argue that Total Communication can be effective. For instance, Connor et al. (2000, 1185-1204) compare oral and Total Communication in 147 profoundly deaf children with cochlear implants prior to the age

of 10. Based on the findings of this study, the children "attained significant improvement in consonant-production accuracy, receptive spoken vocabulary, and expressive spoken and/or signed vocabulary over time . . . regardless of the communication/teaching strategy employed by their school" (Connor et al. 2000, 1199).

However, while the benefits of technology such as cochlear implants may have improved the effectiveness of Total Communication, it still has deeply entrenched weaknesses. For instance, according to a seminal work by Johnson et al. (1989, 5), "it has been known since the early stages of the implementation of Total Communication that the signal in both parts of SSS [sign-supported speech] is flawed." Johnson et al. (1989, 5) argue that expecting a teacher to try to speak and sign at the same time is too much and leads to one or both of the messages being less effective than they should be. For instance, Lane (1993, 134) discusses the ineffectiveness of sign used while speaking. According to Lane (1993, 134), writing from an American perspective, in Total Communication, while "the teacher is speaking, he occasionally 'shouts' a sign - that is, signs a prominent noun or verb if he knows it, in the wrong order and without using the complex grammar of ASL." This will, in many cases, be inadequate input for children who are not able to follow verbal instructions or information. The result of such Total Communication, according to Johnson et al. (1989, 5) is that the signing element of Total Communication is "largely unintelligible."

2.5.2.1 Solutions to challenges of Total Communication

Two possible solutions to the failures of Total Communication are noted by Baker and Knight (1998, 79-80):

1. Drawing on the work of Newell et al. (1990, 409), Baker and Knight (1998, 79-80) suggest that teachers need good knowledge and use of naturally occurring sign language. Natural sign language develops naturally, such as ASL, while signs systems are artificially created to "encode and to be used alongside spoken language" (Swanwick 1998, 111). Natural sign languages are fully-fledged languages and linguistically equal to spoken languages, with their own word order and grammar (Swanwick and Watson 2005, 60).

2. Bilingualism. Another possibility is rather to use sign bilingualism, teaching spoken and sign language separately.

Research by Pribanić (2006) and Hoiting and Slobin (2002) supports the value of sign bilingualism and of natural sign languages. Pribanić (2006, 249-250) discusses the Royal Institute for the Deaf, H. D. Guyot, a policy centre on deaf education for the Netherlands which previously advocated simultaneous use of oral language (Dutch) and Sign Language of the Dutch, called Nederlandse Gebarentaal (NGT). This combination was known as Sign-Supported Dutch (SSD), a form of Total Communication. This was stopped by the Guyot Institute in 1995 as it was not reaching high levels of success as a parent-child form of communication, as well as other difficulties. The institute then shifted to supporting NGT because of a need for a natural sign language rather than the artificial combination of SSD. Research by Hoiting and Slobin (2002), who also discuss the language policy of the Royal Institute for the Deaf, indicates that children exposed to NGT showed advantages over those exposed to SSD. According to Hoiting and Slobin (2002, under "Sign Languages and Sign Systems"), SSD, because it is a mixture of two languages, is a "hybrid" sign system, not a naturally occurring language, unlike NGT. They argue that it is important for deaf children to "see meaningful communication in a *natural language* in order to successfully acquire a first language" (Hoiting and Slobin 2002, under "Sign Languages and Sign Systems").

2.5.3 Sign bilingualism

Given the failures of Total Communication and the recommendations of the previous section, sign bilingualism may be a valid alternative. There is no single accepted formulation of sign bilingualism. In essence, sign bilingualism refers to "the use of two languages in different modalities, i.e. a signed and a spoken language, as distinct from the use of two spoken languages" (Pickersgill 1998, 89). A linguistic and cultural model of deafness underlies sign bilingualism. Deaf children are acknowledged as being part of a minority group because of their language (sign language) and their culture (Deaf culture) and the aim of sign bilingualism is to encourage participation in both hearing and Deaf settings (Pickersgill 1998, 89). This philosophy sees the use of sign language from an early stage of a child's life as essential to deaf children's development, linguistically, socially, and emotionally (Swanwick and Watson 2005, 55). In addition,

whereas in Total Communication, visual-spatial language and speaking happen together, in sign bilingualism, the two languages are both used for teaching, but separately: For instance, the languages may be used by different teachers, at different times and in different places (Pickersgill 1998, 90).

However, sign bilingualism is carried out in practice in many different ways. For French (1999, under “Develop Bilingual Programs: Benefits”), sign bilingualism means that learners have sign language as their first language and learn English as a second language, often only in printed form (writing and reading). However, in a footnote, French (1999, under “Develop Bilingual Programs: Benefits”) notes that bilingual programmes have different goals and implement sign bilingualism in a variety of ways and some children may use spoken English as their first language. The emphasis that some place on spoken language is evident in DeLana et al. (2007, 74), who draw on Nover et al. (1998, 65) and note that ASL/English bilingual education places emphasis on the development of oral abilities: oracy, which is speaking, listening and lip reading, is a core part of sign bilingual education.

2.5.3.1 Advantages of sign bilingualism

Supporters of sign bilingualism see it as a more positive response to deafness than the emphasis on spoken language which is evident in the medical model. For instance, Humphries and Allen (2008, 161) challenge the view that sees deaf children as “deficient” because of a medical condition and instead see deaf children as “emerging language learners.” They criticise both natural auralism and Total Communication as having the following negative characteristics: “Both types are built on the assumption that the deaf child has unusual or difficult language and cognitive development patterns . . . and both, despite the use of ASL teachers in some classes, focus only infrequently on the child’s ASL development or assimilation into the culture of Deaf people.”
An advantage of sign bilingualism is that it may exercise a positive influence in terms of cultural identity as those who are bilingual are part of Deaf culture. As children use sign language, they are drawn into Deaf culture, and the cultural recognition that many children then experience improves their motivation and self-esteem (French 1999, under “Converse with Students in ASL Socially and in Academic Contexts”). Simms and Thumann (2007, 305) concur, arguing that deaf children become empowered when

they and their teachers have a shared language, when communication channels send clear messages and when children feel that they belong to a group.

Furthermore, some believe that learning sign language could also have academic advantages. According to Pribanić (2006, 244), when children use sign language, they are able to develop knowledge about the world, which is essential for successful reading abilities. French (1999, under "Converse with Students in ASL Socially and in Academic Contexts") also verifies the value of sign language, noting that the "early acquisition and use of this language builds a knowledge base, both of language and concepts, that supports further learning." Furthermore, Cummins (2006, 13) notes that there is a positive correlation between proficiency in sign language and effective writing and reading in English.

Another advantage of sign language is its effect on spatial cognition. For instance Bellugi et al. (1994, 289-293) indicate that it can improve spatial cognition in areas such as spatial construction, face recognition in a variety of spatial orientations and spatial organisation. Furthermore, according to Capirci et al. (1998, 141), who studied Italian Sign Language (LIS), sign language may increase visual-spatial cognition and spatial memory. In the opinion of Daniels (2003, 66), who conducted a qualitative study on a sample of 15 hearing children and ASL acquisition, the results of this study, along with others, indicates that the improved visual-spatial skills which may result from the acquisition of sign language could result in improved sight word recognition, better reading skills, more extensive English vocabularies and improved receptive/expressive English language development.

2.5.3.2 Challenges of sign bilingualism

There are several challenges to sign bilingualism. One is that there is a gap between the theory and practice of sign bilingualism. Theoretically, deaf children should be able to have competent sign language skills by the time they are ready to start school; practically, this often does not happen (Koutsoubou et al. 2007, 128). This may be because parents do not have adequate sign language skills: According to Nicholas and Geers (2007, 1048), over 90% of families with deaf children are hearing and communicate via spoken language. Teachers too may lack skills. According to Simms

and Thumann (2007, 305), in America, there is a growing “need for teachers whose educational preparation programs match the ASL/English bilingual philosophy of K-12 deaf education programs.” In South African schools for the deaf, only 14% of teachers are fluent in sign language, according to the Deaf Federation of South Africa (DEAFSA) (2009, under “Deaf Education”).

Secondly, those in education should not assume that deaf children will benefit more from being part of Deaf culture than they may do if they are able to integrate into hearing culture. For example, Van Dijk (2003, 18) argues that some children may not feel that they fit in with Deaf culture because of their home environment. Furthermore, access to new technology, like cochlear implants, may make deaf children more at home in hearing settings (Van Dijk 2003, 18). In addition, a child who fits into Deaf culture may feel alienated from his or her hearing family, or vice versa, because of cultural differences. The question then arises whether one’s culture is determined predominantly by one’s physical characteristics or by the culture of the family into which one is born.

Another challenge is using sign language to build writing and reading skills. While potential advantages of sign language for academic and language development were mentioned under the section “Advantages of Bilingualism,” a repeated point of authors such as French (1999, under “Converse with Students in ASL Socially and in Academic Contexts”) and Cummins (2006, 13) is the importance of early acquisition of sign language. This would develop a deaf child’s emergent literacy. However, as noted above, not all deaf children have an established first language when they begin school (Koutsoubou et al. 2007, 128). In addition, Mayer and Wells (1996, 93) question this link between first language competency in sign language and competency in reading/writing using the second language of English.

Furthermore, sign language may be a dying language. For instance, Johnston (2006, 169) claims that the Australian signing Deaf community will probably decline. He gives several reasons for this, such as cochlear implants and the decrease in rubella cases (Johnston 2006, 141, 157)]. Although Turner (2006, 410), who discusses Johnston’s research, acknowledges that the position of sign language in Australia is not necessarily indicative of its position worldwide, he notes that “it is hard, if not impossible, to

imagine a country anywhere that cannot expect its signing Deaf community to be overshadowed by one or more forms of linguistic threat." For instance, according to Vonen (2006, 220-221), another country in which sign language has been affected is Norway, in which sign language has legal status. Since 1997, all Norwegian children whose first language is Norwegian Sign Language (NSL) are entitled to receive education in NSL (Møller Kompetansesenter 2006, par. 1). However, the position of NSL is not as stable as it appears due to the advent of cochlear implants. Vonen (2006, 221) notes that, according to Wie (2005, 1), between 80 and 90% of children in Norway who have congenital or prelingual profound deafness wear cochlear implants. The online leaflet of the only Norwegian team that provides child cochlear implants does not even suggest NSL as a possibility, prior or post implantation (Vonen 2006, 221). In England, over 50% of profoundly deaf children starting school have received a cochlear implant, and this percentage is growing: It is likely that spoken language will play a crucial role in their education (Swanwick and Gregory 2007, 5). Turner (2006, 411-412) identifies several reasons why the loss of sign language would affect both signers and the hearing world badly. First, linguistic diversity would be reduced if sign language ceased to exist. In addition, Turner fears that Deaf culture could die if sign language becomes extinct. Moreover, the differences between vocal and visual languages provide research opportunities for humanity to gain deeper insight into the working of the mind, in which language is a key aspect.

2.5.4 Oralism and natural auralism

Unlike sign bilingualism, which places emphasis on sign language, oralism, as the name suggests, focuses on teaching deaf learners spoken language. This philosophy aims to encourage learners "to speak so that they can communicate with their family and the rest of the hearing community into which they have been born" (Watson 1998, 69) and it refers to various teaching approaches (Watson 1998, 69). An example is the maternal reflective approach, found in Van Uden (1977, 95-97; 100-101; 121-122), that promotes speech interaction between a deaf child and someone with more developed language, and this conversation forms the basis of further discussion and grammatical structure analysis: the development of writing is also essential in this approach. In addition, various methods of teaching the structure of English directly and trying to control

young children's exposure to language structure are called "structural oralism" (Watson 1998, 70).

While it is not possible to say that there is just one clear oral approach, a "new and distinctive oral approach has evolved" (Watson 1998, 70). This new approach shares the goal of previous established oral approaches, which is advancing verbal language as the main type of communication for the deaf child. Differences from previous approaches are related to discoveries regarding language acquisition and technology: Based on theories of language acquisition, this new approach, known as natural auralism or the oral/aural approach, also aims to ensure that deaf children acquire language in conditions known to benefit language acquisition in hearing children and is available to all children, regardless of hearing loss severity, because of the development of cochlear implants and more effective hearing aids (Watson 1998, 70-71).

Thus, in the natural auralism approach, deaf children follow a similar pattern of language and reading/writing acquisition to hearing children. They learn to speak and this spoken language gives them an understanding of the nature of language, and they then use this knowledge to help them with their writing and reading (Lewis 1998, 101). In the case of speaking deaf children for whom English is a second language, their speech and emergent literacy in their first language could give them a basis from which to develop their second language, in its verbal and written forms: According to Clark, (2000, 183), "even young children who are learning a second language bring all of the knowledge about language learning they have acquired through developing their first language."

Support for the connection between spoken and written/read language can be found both in older and more recent research. For instance, Kroll (1981, 42) argues that improving children's spoken language is essential for promoting reading and writing. More recent support is evident in the work of Martindale (2007). Martindale (2007, 74) draws on the work of seven other sources to conclude that indicators of future reading proficiency determined by the National Reading Panel (2000, 7-18) "are decidedly based on a child's ability to hear and use oral language." Furthermore, Martindale (2007, 74) argues that deaf children who are able to access sound are at an advantage

over children who use sign language as they can “incorporate phonological and phonemic awareness into the reading process.”

2.5.4.1 Controversy regarding the role of speech

Whether only speech is necessary for the development of reading and writing or whether sign language is equally effective is a controversial issue. Further support for the need for speech comes from Adams (2001). Adams (2001, 69) notes that in reading, according to connectionist and parallel distributed processing models, there are subprocesses which all work at the same time, proving that reading is an interactive process rather than top-down or bottom-up. The different subprocesses are the context processor, semantic processor, orthographic processor and phonological processor (Adams 2001, 69-71). If any of the subprocesses are missing or damaged, this impacts on the whole reading process: This would happen in the instance of a deaf child without technological assistance such as a hearing aid as he or she would be lacking in the subprocess of speech sounds (Robertson et al. 2006, 149). According to Robertson et al. (2006, 149), “a diminished speech signal will usually result in diminishment of the other processes associated with meaning making and interpretation capabilities in spoken language, because phonological information is foundational to spoken language” and speechreading is not an adequate alternative.

Not all would agree that speech is necessary for the development of reading and writing. According to Dye et al. (2008, 73) deaf children without access to sound may have their own way of approaching reading, using different cognitive skills and types of knowledge from hearing children, ones which do not rely on spoken language. Evans (2004, 17) refers to the usefulness of sign language in developing reading and writing in the contexts/culture in which they occur. Pribanić (2006, 238), too, agrees that reading and writing in deaf children are not impeded by lack of speech. Others who have indicated a link between sign language and printed forms of English are Strong and Prinz (1997, 131-136) and Hoffmeister (2000, 143-163).

2.5.4.2 Advantages of natural auralism

Several of the advantages of natural auralism have already been discussed above, such as the opportunity to learn spoken language and the benefits this may hold for the development of reading and writing. For example, Lewis (1998, 101) refers to two fairly early studies on deaf children learning via natural auralism which show they acquired a mean reading level of a 13-year-old by the time they left school (See Lewis 1996, 1-7; Geers and Moog 1989, 69-86). This is far higher than the levels traditionally quoted for deaf school leavers. For instance, according to Burden and Campbell (1994, 331), "the deaf . . . typically leave full-time education in their late teens with the reading abilities of a 10-year-old." As effective reading and writing abilities would be likely to impact on children's grades, natural auralism could also positively affect academic performance in general. In addition, cochlear implants combined with oral education in very young children and the realistic expectation of spoken language development in these children at equivalent levels to hearing children (Nicholas and Geers 2007, 1060) mean that reading/writing skills on a par with hearing learners are obtainable (Luterman 2007, 43).

Another benefit could be social. Children who use sign language and struggle to speak will probably experience isolation from the hearing world. Ladd (2003, 33), when discussing Deaf culture, reflects on the alienation of culturally Deaf children, noting that they "experience scorn, pity and mockery" from hearing children because of the lingusitic barrier. This isolation may apply not only to friends but also to family. Because a high percentage of deaf children live in hearing families, children who grow up without adequate speech abilities may struggle to communicate with their parents whose primary mode of communication is oral.

The advantages of being able to interact effectively via oral communication are also apparent once children reach adulthood. Despite advances in technology which mean interaction increasingly takes place online or via cell phone, a great deal of communication is still verbal. Not allowing children every opportunity to develop their oral and aural skills restricts their career opportunities. A child who has experienced maximum exposure to speech from an early age is likely to have a better chance at becoming an effective employee in a predominantly hearing world.

2.5.4.3 Challenges of natural auralism

A disadvantage of natural auralism is linked to the age at which deaf children are able to learn to speak, read and write. As mentioned above, children begin to develop emergent literacy skills far earlier than researchers previously realised. The problem is that although "opportunities for earlier and more effective listening experiences for all deaf children are greater than they have ever been before" (McCracken and Laoide-Kemp 1997, xi), according to Lewis (1998, 105) a large number of deaf children start school before their spoken language is sufficiently developed and they have less world knowledge. Because spoken language abilities impact on reading and writing skills, a child with underdeveloped spoken English may also exhibit underdeveloped writing. This may be particularly true when, as often happens in South Africa, the child's first language is not English and detection of deafness happens late (DEAFSA 2009, under "Deaf Education"). Thus the child's home language may be underdeveloped, never mind his or her English.

A further challenge to natural auralism is that for a minority of children who have access to technology such as cochlea implants, it still is not a viable option. This is acknowledged by many who recommend this approach (Watson 1998, 74). The child's degree of hearing loss, while this may play a role, is often not the ultimate reason, so the causes are unclear (Watson 1998, 74). Perhaps they are more visually orientated or are born to deaf parents whose first language is signing. Although natural auralism appears to hold more promise when the necessary technology is available, this approach should not take precedence ahead of the needs of the child (French 1999, under "Converse with Students in ASL Socially and in Academic Contexts").

2.6 APPROACHES TO TEACHING READING AND WRITING

In addition to the controversy surrounding the type of language most suited to the needs of deaf children, another contentious area is how to teach writing/reading. There have long been two opposing approaches, top-down and bottom-up approaches. A discussion of these two approaches is followed by a suggested alternative, interactive approaches.

2.6.1 Bottom-up approaches for reading and writing

Bottom-up approaches are focused on lower-level processes, such as word and letter recognition, and a prototype for this kind of approach is the model developed by Gough (1972, 291-320). These approaches are one directional (moving from lower-level to higher level) and "higher-level processes" which are connected to constructing meaning do not have an impact on the lower-level processes (Williams 2004, 589). Thus bottom-up approaches involve a step-for-step linear process (Lewis 1998, 103) as well as a hierarchical one as the reader needs to achieve each level (in hierarchical order) before continuing to the following level (Lipson and Wixson 1991, 7).

Bottom-up models can be divided into various levels. Lipson and Wixson (1991, 7-8) provide a prototypic bottom-up model as an illustration, which contains four levels: The first level is perceptual analysis. This involves dividing the text into "distinctive features, letters, letter clusters, and/or words" (Lipson and Wixson 1991, 7). Sometimes models also involve transferring visual information into phonological or sound codes relating to the visual units. The second level involves the analysis of these sound units based on word entries in the reader's internalised dictionary. The third level is a syntactical analysis of the words. For instance, if the reader sees the words *the, cow, barn, the, chased, dog, the, into*, there are a variety of syntactically correct alternatives, although not all might make sense, such as "the barn chased the cow into the dog." The fourth level is a semantic analysis which tries to determine which word, phrase and sentence order are the most meaningful, taking into account knowledge regarding emotions, events and ideas. This would result in the final interpretation: "The dog chased the cow into the barn."

In teaching, such models encouraged a phonics-based approach for young children, which emphasised "letter-by-letter 'sounding out'" and "decontextualized exercises" (Williams 2004, 589), and had many benefits. For instance, Watson (1999, 99) notes the following three types of knowledge which result from bottom-up strategies: children utilising a "well-developed sound system" (Watson 1999, 99) are able to write words that a teacher can recognise even if spelling is not completely accurate. Secondly, when children encounter a new word, they can use their developing awareness of the relationship between letters and sounds to help them to pronounce part, or more, of that

word, “which may help them to guess the whole word, using this knowledge plus the context” (Watson 1999, 99). The third type of knowledge children develop is an awareness of rhyme and alliteration, which might have come from songs or nursery rhymes. All of these skills and types of knowledge will help children with reading and with writing (Watson 1999, 99). In addition, research on eye movement has produced evidence that “bottom-up processing contributes importantly to fluent reading” (Grabe 1991, 385).

2.6.2 Disadvantages of bottom-up approaches

One disadvantage of bottom-up models is that they are unable to explain certain reading behaviours. For example, Wray and Medwell (1991, 98) note that people read more quickly than they are able to explain and are unlikely, when reading, to focus on every word or letter. Thus, the bottom-up models cannot explain why a fluent reader is still able to read sentences like the following: “If yUo aer a fluet reOdur yUo wll hve oN prblme reOdng ths sNtnce” (Wray and Medwell 1991, 98).

Secondly, it cannot explain the interpretation of homonyms: For instance, the bottom-up approach cannot explain why a reader interprets the word “bow” in the following different ways: bending over to show respect to royalty, the front of a ship, or a ribbon around a present (Lewis 1998, 103).

Another weakness of bottom-up models is that often teachers spend too much time on low-level skills, which can hinder learners from developing critical thinking (French 1999, under “Are Instructional Goals for Reading and Writing Selected According to Important Skills and Strategies That Individuals Need?”).

Furthermore, Lipson and Wixson (1991, 8-9) note that words, letters and sentences cannot simply be read correctly. They also need to be understood. Sentences, words and letters are better understood when they are meaningful, and what is meaningful is determined by the knowledge in a reader’s long-term memory. As this would be Lipson and Wixson’s final level of prototypic bottom-up model, semantic analysis, it is clear that this higher level should also be an important element of teaching reading. The same

would apply to writing. Simply writing words is useless: What someone writes must be meaningful.

2.6.3 Top-down approaches

The realization of the importance of higher levels promoted the top-down approach, such as the prototypical model of Goodman (1967, 126-135). Thus, researchers who support top-down approaches spend much time on upper-levels of processing, like semantic and syntactic analysis (Lipson and Wixson 1991, 10). Instruction emphasises "meaning-making" and the importance of context, and the lower levels do not receive much attention (Lipson and Wixson 1991, 10). According to Lewis (1998, 103), readers using top-down approaches are actively involved because their use of semantic and syntactic guides, which help with the anticipation and prediction of meanings, are reliant on their experience of the world, language and reading. Watson (1999, 98) confirms the role of higher-level processes:

"When hearing children approach a text to read it they do not start with a completely blank mind. They start with a knowledge of the spoken form of the language which they will encounter in reading. Then they gain some insight into the topic from the pictures which all early reading books contain. They have some understanding of the way in which stories typically have a beginning, a middle and an ending, and they are familiar with some of the language commonly associated with each stage, such as 'once upon a time'."

Therefore, focusing on higher-level processes has many benefits. Moreover, notes Watson (1999, 98), previous knowledge of the world helps children who are reading to anticipate what is going to happen in the story and possible endings to the story: Thus readers do not focus on decoding every word but extract meaning from the text as a whole. Children also benefit from top-down skills when they are writing. For example, the knowledge that children develop about books and their structure, as well as life experience, provides children with ideas for stories. For instance, they might decide to compose a story that bears a resemblance to one they have read or heard, or they might choose to write about an experience in their life. In addition, understanding how books

are written will help children to distinguish between language that is written and language that is spoken (Watson 1999, 98).

2.6.4 Disadvantages of top-down approaches

There are weaknesses inherent in relying on top-down models only. For example, Lipson and Wixson (1991, 10) have noted that top-down approaches often cannot account for the ways in which beginner readers approach a text. These readers often read using a lower-level text-driven system, focusing on the text only because they are unfamiliar with it and the content, yet they "can still derive meaning in the process" (Lipson and Wixson 1991, 11). Even accomplished readers resort to text-driven options if they are reading a passage they find particularly difficult (Lipson and Wixson 1991, 11).

A shortcoming of the top-down approach with regard to writing could be that having excellent higher-level skills would not necessarily make a good writer. For example, a learner who organised his or her paper, taking the purpose and audience of the paper into account (all higher-level skills) might still produce a piece of writing riddled with lower-level mistakes such as spelling errors. Such a paper could impede the clarity of the message and thus fail to succeed in the goal of the assignment.

2.6.5 Interactive approach

As seen by the above criticisms of both bottom-up and top-down approaches, focusing too much, or solely, on bottom-up or top-down approaches is problematic. Thus, a way to avoid such weaknesses and shortcomings is the use of interactive models. A well-known interactive model is that of Rumelhart (1977, 573-603) and another that of Stanovich (1980, 32-71). This approach has found favour with many, such as Guérard and O'Brien (2005, 123), who argue that "any complete model of the comprehension process will certainly need to include both bottom-up and top-down components."

An interactive approach is particularly useful to deaf learners as they may be lacking in both bottom-up and top-down abilities. Bottom-up weaknesses, for example, may involve reading problems regarding decoding because of "reduced language and

listening skills" (Lewis 1998, 103). Deaf children could also struggle with top-down challenges which may occur in children who have limited experience of the world and of language (Lewis 1998, 103).

Some core elements of interactive models are the following, quoted below (Lipson and Wixson 1991, 12):

- reading is a cognitive process [as is writing]
- meaning results from the interaction between reader [or writer] and text
- processing proceeds both from whole to part and part to whole
- different emphases in instruction are appropriate at different times.

2.7 SUMMARY

To summarise, Chapter 2 discussed the theory behind literacy, deafness, writing and the teaching of writing. The start of the chapter contained a discussion of literacy, particularly emergent literacy, the critical period hypothesis, and the relevance of these theories for the language acquisition and learning of deaf children. Following this was a discussion of the impact of different aspects of deafness on language acquisition and learning. This section illustrated that deafness can have a negative impact on a deaf child's language acquisition and learning of reading and writing. Next came a discussion of the importance of writing and the challenges facing South African deaf children concerning their reading and writing skills. The chapter then contained an analysis of debates over the language of instruction via which to teach deaf children writing/reading, concluding that both natural auralism and sign bilingualism have advantages and challenges though there seems to be more doubt about the link between sign language and written language than spoken and written language. This, together with the researcher's own personal biases towards language (she uses spoken language), encourage her to favour the medical model. The chapter ended with a discussion of arguments concerning bottom-up and top-down approaches to writing and the recommendation in favour of interactive approaches.

CHAPTER 3 METHODOLOGY

3.1 INTRODUCTION

3.1.1 Philosophical framework

The philosophical position underlying this research project is that of pragmatism. Pragmatic research is about being practical and doing "what works" (Creswell 2003, 11; Patton 2002, 72) and finding answers to problems (Creswell 2003, 11; Patton 2002, 136). This pragmatism does not limit a researcher to following one specific method of research. Instead, people will select the methods, or combinations of methods, that are most suitable. As Patton (2002, 72) notes, pragmatism allows people to "eschew methodological orthodoxy in favor of *methodological appropriateness* as the primary criterion for judging methodological quality, recognizing that different methods are appropriate for different situations."

From a pragmatic position, a mixed methods approach to this dissertation is therefore appropriate. Mixed methods research uses both quantitative and qualitative methods. As Johnson and Onwuegbuzie (2004, 15) explain, "If you visualize a continuum with qualitative research anchored at one pole and quantitative research anchored at the other, mixed methods research covers the large set of points in the middle area."

A benefit of mixed methods is that it helps to capture the complexity of a problem rather than approaching it from one angle. As Greene et al. (2001, 27) note, "the fundamental uncertainty of scientific knowledge - especially about complex, multiply-determined, dynamic social phenomena - can be better addressed through the multiple perspectives of diverse methods than through the limited lens of just one." In addition, mixed methods have been growing in popularity as an effective way to gather a range of data (Greene et al. 2001, 27).

Within the mixed methods approach, there are different strategies which researchers can follow. Creswell (2003, 16) explains these approaches: the sequential, concurrent and

transformative. In sequential procedures, the researcher aims to use one method, either quantitative or qualitative, to develop the findings of another method. Second, in concurrent procedures, the researcher gathers quantitative and qualitative data simultaneously and then "integrates the information in the interpretation of the overall results" (Creswell 2003, 16). Third, transformative procedures involve the use of a theoretical framework for the research. Within this theoretical perspective, both quantitative and qualitative research take place, either sequentially or concurrently.

In this dissertation, the strategy used is a transformative procedure as the theoretical framework is that of psycholinguistics. More specifically, with reference to theories of deafness, the researcher is using both the medical model and linguistic/cultural model and their relation to emergent literacy. While the researcher is biased towards the medical model because, as discussed in Chapter 2, the link between sign language and writing/reading seems less certain than the connection between spoken language and writing/reading, the researcher does also acknowledge the role that the linguistic/cultural model has to play in deaf education in South Africa.

The research took place sequentially, as first the researcher used quantitative research to determine whether there was a significant difference between the writing of deaf and hearing children. Thereafter, the researcher used qualitative research, in the form of a second literature review supported by qualitative interviews to develop recommendations to improve the writing of deaf and hearing children, such as the use of interactive approaches to writing and drafting.

3.1.2 Outline

The following sections of this chapter discuss further details of the methodology employed to determine whether the writing levels of deaf children are significantly lower than those of hearing children in the Eastern Cape. The section below defines T-units, which the researcher used to analyse the writing of deaf and hearing children. Thereafter, the chapter contains the experimental design for analysing the writing of deaf children and the research questions and hypotheses, followed by a discussion of the sample and participants of the study. Next in the chapter comes information on the ethical considerations taken into account, as well as a section on the materials used and

the conducting of research. Following this is a discussion of methods of data collection and processing and a limitation on the study. The final section highlights challenges which were encountered and offers some suggestions for those using similar methodology in future research.

3.2 T-UNITS

The T-unit, a term coined by Hunt (1965, 21) is well-known as a reliable measurement of writing ability. Gass and Selinker (1994, 41) explain Hunt's term as "an independent clause and any associated dependent clauses, that is, clauses that are attached to or embedded within it." Thus, a T-unit always contains a subject and a finite verb. If a T-unit begins with a coordinate conjunction, the coordinate conjunction would be the first word of the new clause (Hunt 1965, 20).

Below are illustrations from Gass and Selinker (1994, 41) to illustrate what does/does not constitute a T-unit. In the examples, 2-77 and 2-78 are T-units, unlike 2-79, which is not an independent clause as it starts with a subordinate conjunction:

(2-77) John woke up.
(2-78) John woke up, although he was tired.
(2-79) although he was tired.

The T-unit is the most appropriate choice for this research project for several reasons. First, it is suitable for the study as this research project focuses on written work. According to Gass and Selinker (1994, 41), the use of T-units is "most reliable with written data." Second, T-units can be used to test the written work of deaf children. White (2007, 29) writes about an instrument known as the Structural Analysis of Written Language (SAWL), which enables teachers to use T-units for assessing improvements in the written English of children with hearing loss. Klecan-Aker and Blondeau (1990, 275-282) use T-units in their article on the writing of deaf children, "An Examination of the Written Stories of Hearing-Impaired School-Age Children." Third, most of the deaf and hearing children are English second-language (ESL) speakers, and T-units are also an appropriate method for such learners (cf. Gaies 1980, 53-60; van der Walt and Hattingh 2007, 15-28).

3.3 EXPERIMENTAL DESIGN

The experimental design took the form of a comparison between the writing of 30 deaf children and 30 hearing children. It was based on that of van der Walt and Hattingh (2007, 15-28) in their research, "Fluency and Accuracy Levels in Writing of Grade 12 ESL Learners." These authors analyse a sample of 216 writing pieces. They investigate the compositions in terms of fluency and accuracy. First, the texts are divided into T-units. Subsequently, van der Walt and Hattingh look at the length and error of the writing pieces (van der Walt and Hattingh 2007, 18). In order to determine what constitutes an error, the authors are interested only in grammatical accuracy, not spelling or punctuation.

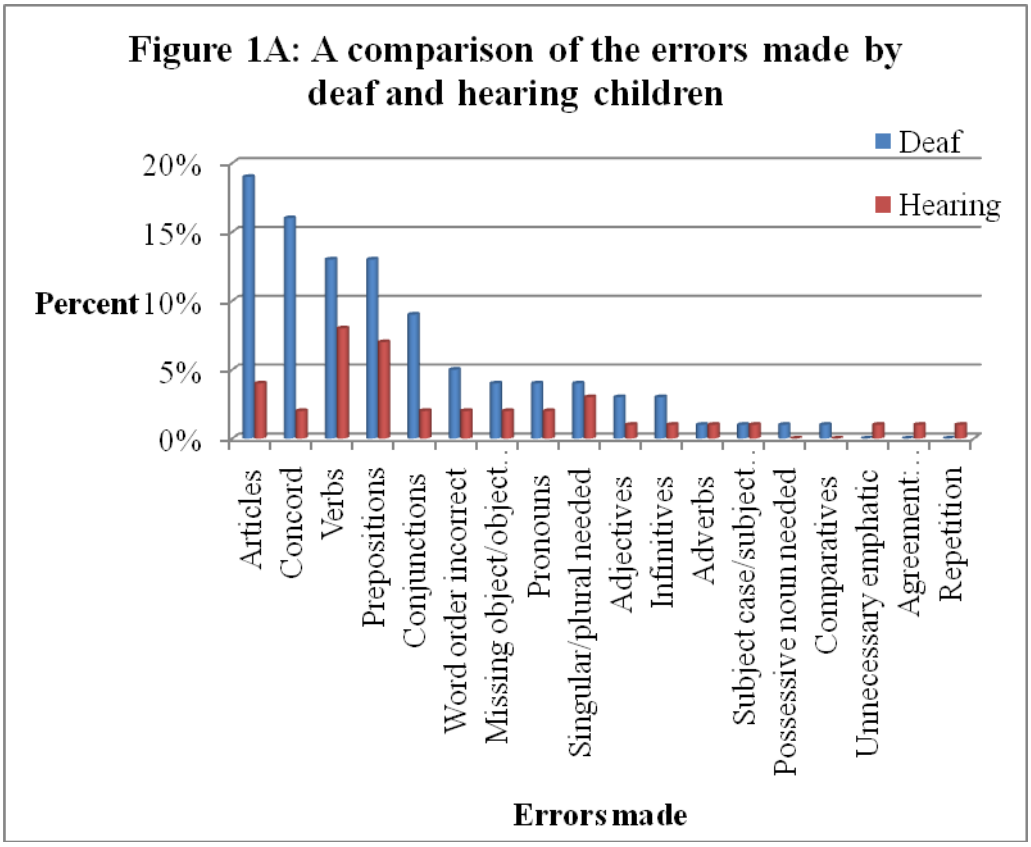
Similarly, in the researcher's current work on deaf children, the essays were divided into T-units, and length and errors were identified. In many instances, the hearing children initially appeared to have fared worse than the deaf children. For instance, the hearing children had 122 verb errors overall compared with 66 by the deaf children. However, this overlooks the fact that the hearing children wrote far more. In order to obtain a more balanced view of the children's errors, the researcher worked out each error as a percentage of the total number of T-units to obtain an idea of how many T-units would contain errors if each T-unit contained only one error. In the deaf group, the total number of T-units was 515, and in the hearing group, the total number of T-units was 1521. The results also indicated, for the main errors, that the deaf children made far more grammatical mistakes than the hearing group. Table 1 indicates the percentages for these errors.

Table 1: List of errors and percentages

	Number of errors made by deaf children	**Percent per total number of T-units**	**Number of errors made by hearing children**	**Percent per total number of T-units**
Incorrect articles/missing articles/ unnecessary articles	97	19%	59	4%
Concord errors	83	16%	34	2%
Incorrect tense/incorrect form of verb/ unnecessary verb/missing verb	66	13%	122	8%
Incorrect preposition/ unnecessary preposition/ missing preposition	65	13%	106	7%
Missing conjunction/ unnecessary conjunction	46	9%	29	2%
Word order incorrect	26	5%	28	2%
Missing object/object case needed	22	4%	32	2%
Unnecessary pronoun/vague pronoun/ missing pronoun/needing possessive pronoun	21	4%	36	2%

Singular/plural needed	20	4%	45	3%
Missing adjective/correct form of adjective needed	18	3%	22	1%
Infinitive missing/parts of infinitive missing or incorrect	14	3%	11	1%
Missing adverb/adverb form needed	6	1%	14	1%
Subject case/subject needed	4	1%	18	1%
Possessive noun needed	3	1%	2	0%
Incorrect form of comparative/ missing comparative	3	1%	1	0%
Unnecessary emphatic	2	0%	14	1%
Incorrect agreement between pronoun/ possessive adjective and antecedent	1	0%	8	1%
Repetition	0	0%	13	1%

The differences in the numbers of errors made by the two groups are illustrated in Figure 1A:



To determine fluency and accuracy, various calculations were used, as quoted below (van der Walt and Hattingh 2007, 19):

- Fluency frequencies: Average number of words per composition (W) and average number of T-units (T);
- Fluency ratios: Average number of words per T-unit (W/T) and average number of words per Error-Free T-unit (W/EFT);
- Accuracy frequency: Average number of Error-Free T-units per composition (EFT);
- Accuracy ratio: Average number of Error-Free T-units per T-units (EFT/T).

3.4 THE RESEARCH QUESTIONS

Using T-units to measure writing proficiency, the main research question of this dissertation is the following:

- Are there significant differences between the written English of deaf children and the written English of hearing children in the Nelson Mandela Metropole?

Arising from this question are more specific questions, drawing on the research of van der Walt and Hattingh (2007, 19):

- What are the differences, in terms of fluency frequencies and fluency ratios, between the written English of the two groups?
- What are the differences, in terms of accuracy frequencies and accuracy ratios, between the written English of the two groups?

Based on the answers to these questions, another question may arise, should research indicate (as previous research suggests is likely) that the writing of deaf children contains significantly fewer T-units and indicates significantly lower accuracy and fluency:

- What recommendations can be made, based on the findings of the research project, for improving the written English of deaf children?

This question will be dealt with in a separate section dealing with qualitative research on recommendations to improve the writing of deaf children.

3.5 RESEARCH HYPOTHESES

$H_{0;1}$: Fluency frequencies: There is no significant difference between the mean number of words per essay produced by deaf children and the mean number of words per essay produced by hearing children.

$H_{1;1}$: Fluency frequencies: There is a significant difference between the mean number of words per essay produced by deaf children and the mean number of words per essay produced by hearing children.

$H_{0;2}$: T-unit fluency frequencies: There is no significant difference between the mean number of T-units per essay produced by deaf children and the mean number of T-units per essay produced by hearing children.

$H_{1;2}$: T-unit fluency frequencies: There is a significant difference between the mean number of T-units per essay produced by deaf children and the mean number of T-units per essay produced by hearing children.

$H_{0;3}$: Fluency ratios: There is no significant difference between the mean number of words per T-unit produced by deaf children and the mean number of words per T-unit produced by hearing children.

$H_{1;3}$: Fluency ratios: There is a significant difference between the mean number of words per T-unit produced by deaf children and the mean number of words per T-unit produced by hearing children.

$H_{0;4}$: Error-free fluency ratios: There is no significant difference between the mean number of words per error-free T-unit produced by deaf children and the mean number of words per error-free T-unit produced by hearing children.

$H_{1;4}$: Error-free fluency ratios: There is a significant difference between the mean number of words per error-free T-unit produced by deaf children and the mean number of words per error-free T-unit produced by hearing children.

$H_{0;5}$: Accuracy frequency: There is no significant difference between the mean number of error-free T-units per essay produced by deaf children and the mean number of error-free T-units per essay produced by hearing children.

$H_{1;5}$: Accuracy frequency: There is a significant difference between the mean number of error-free T-units per essay produced by deaf children and the mean number of error-free T-units per essay produced by hearing children.

$H_{0;6}$: Accuracy ratio: There is no significant difference between the mean number of error-free T-units per T-units produced by deaf children and the mean number of error-free T-units per T-units produced by hearing children.

$H_{1;6}$: Accuracy ratio: There is a significant difference between the mean number of error-free T-units per T-units produced by deaf children and the mean number of error-free T-units per T-units produced by hearing children.

3.6 SAMPLE AND PARTICIPANTS

The sample for this study came from schools in the Nelson Mandela Metropole where all schools known to cater for children with hearing loss were contacted. After permission had been granted by the schools, the researcher sent letters to the parents/guardians of all the deaf children requesting permission for them to take part in the research. Those children whose parents/guardians responded positively were asked to write three writing pieces in English. Of the children who wrote these pieces, the researcher selected those for whom all the necessary matching-up information was available, namely grade, gender and spoken home language, and whose academic marks were retrievable.

To select the hearing children, permission letters were sent out to the parents/guardians of hearing children attending the same school as the deaf children when a school catered both for hearing and deaf. Those whose parents/guardians gave permission for their children to participate in the study were asked to write three writing pieces. Of these children, those who did not complete three essays or whose matching-up information was incomplete were excluded from the study. Of the remaining children,

sometimes more than one hearing child could be matched with one specific deaf child: If so, just one of these possible matches was randomly chosen. After all the data had been collected, the researcher found that while some deaf children could have had several matches, other deaf children were not able to be matched to hearing children in the criterion of spoken home language.

To rectify this, purposive sampling was used to select two schools likely to match this language criterion. Children in the relevant grades at these schools were given letters by their teachers to take home to their parents/guardians. Those children whose parents/guardians responded positively were also asked to write the three writing pieces, and of the children who wrote, those who wrote three essays, matched up with deaf counterparts and for whom all the relevant information was available (such as academic marks for 2008, birth date, and home language) were included in the final sample.

The total number of participants was 60. This group consisted of children who were in Grades 4 to 7 in 2008 and whose parents/guardians and principals had permitted the analysis of their writing. The participants consisted of two groups:

1 Group 1 consisted of 30 deaf children, with hearing losses ranging from mild to profound in Grades 4 to 7 in 2008.
2 Group 2 was a group of 30 hearing children in Grades 4 to 7 in 2008.

3.7 ETHICAL CONSIDERATIONS

First, the researcher obtained ethics approval from Nelson Mandela Metropolitan University. Permission was also granted by the Department of Education. Schools were contacted and heads asked for permission to conduct research. Because the participants in the study for this dissertation were children, permission from parents/guardians was necessary. Thus, the next step was to send letters home via the learners, requesting permission to use the children’s written school tasks in the research project. The reply slips of those parents/ guardians who assented were kept, and only the writing of these children was analysed.

The participants' confidentiality was maintained by avoiding any mention of their names in the study. Moreover, the analysis focused on group comparison, not on individual writing levels. This further protected the confidentiality of the children.

3.8 MATERIALS AND CONDUCTING OF RESEARCH

The participants' writing ability was assessed according to essays covering a range of topics. They were predominantly narrative essays which required imagination, such as a story about how a learner would survive if stranded on a desert island. However, some of the lower grades found these difficult, as did one school in which deaf learners struggled with abstract concepts. Therefore, some slightly more concrete essays were also included, on topics such as "What do you do at school?"

The children were allowed to ask the researcher for the spelling of words, and the researcher wrote important words up at the request of the children to assist them in their writing. This was also helpful for children whose first language was not English as they were able to use words that otherwise they might not have known in a language outside their home language. For this reason, the researcher was not able to test the vocabulary of the children.

The children wrote three essays in English under controlled conditions during school hours. When the children felt they had finished writing, they handed in their essays. No child was allowed to take an assignment home to prevent parents/guardians' assisting their children and affecting the level of written English. The essays were administered either by the researcher or by staff currently employed at the schools.

3.9 METHODS OF DATA COLLECTION AND PROCESSING

In this research study, the data were written English assignments by children. The reason for focusing on written work was that at school, tests/exams and many assignments are in written form, and without appropriate skills, deaf learners will struggle to cope academically.

The data were collected manually. If the researcher conducted the class, the essay was taken in at the end of the class. In one case, the child felt that he was not finished, and the researcher gave the essay to the child's teacher: The essay was subsequently finished in class by the learner and returned to the researcher at a later stage. If the researcher did not conduct the class, and teachers currently employed at the school gave out the essays, the researcher fetched the essays from the teacher when they had been completed: All teachers had previously been reminded that no essays were to be finished at home.

3.10 LIMITATIONS

A limitation was that in the sample of deaf participants, some of the deaf children used sign language while others used speech. Because of the small number of children participating in the study, including both groups was unavoidable in order to obtain a sample complying with the minimum number required for a quantitative study. However, these two groupings are not necessarily mutually exclusive as some of the signing children have been able to pick up some of their home language. In addition, even within the two groupings, the children would by no means be homogeneous.
In addition, another limitation was that the researcher matched the two groups according to spoken home language. While, as noted above, some of the deaf children using sign language had acquired some of their home language, the extent to which they had done this was significantly limited by the extent of their hearing loss.

3.11 CHALLENGES WHILE CONDUCTING, COLLECTING AND PROCESSING THE RESEARCH: SUGGESTIONS FOR FUTURE RESEARCHERS

There were numerous challenges during the process of conducting, collecting and processing the research. These are included in the hope that they will prove useful to potential researchers and reduce frustration and unreasonable expectations about the ease with which data can be obtained. The main challenges were those of delayed returns of reply slips, school activities and tight schedules, transport unrest, essays written in the child's home language and computer problems.

3.11.1 Delayed returns of reply slips

Children did not always return reply slips promptly. At one school, the handing out of notices had to be delayed due to a week in which learners were involved in raising awareness about issues concerning deafness. There were also unforeseen circumstances which caused the return of reply slips to take longer than expected: In one school, the teachers decided to start their holiday a week earlier than scheduled.

3.11.2 School activities

In addition, conducting and collecting data took longer than envisaged because of unforeseen school activities and tight schedules. Sometimes school activities or educational meetings meant that teachers and heads were not available to consult with over arrangements regarding the conducting of classes or the collection of essays from children. Events such as dramatic productions and sports days caused some delays. There were also times when tight academic schedules made it difficult for essays to be completed in the time originally planned.

3.11.3 Transport unrest

Taxi strikes caused havoc with school children reliant on public transport. The strikes arose as a result of opposition by taxi drivers to the Bus Rapid Transit (BRT) system being planned for the 2010 Fifa World Cup. Those children affected were unable to attend school, and teachers lost vital school time.

3.11.4 Essays written in a different language

At two schools, there were occasional instances when ESL speakers wrote their essays in their home language in place of English. When the researcher was conducting the class in question, this was easy to rectify during class time. When the researcher was not conducting the class, it took longer to obtain essays in English.

3.11.5 Computer problems

In addition to the above delays, computer problems can result in data processing taking place more slowly than expected. The researcher's hard drive crashed irretrievably, resulting in the loss of her entire database. As she did not have a copy saved elsewhere, this data had to be re-entered manually on a new computer.

3.11.6 Recommendations regarding challenges

While delays can cause frustration, this can be minimised by being aware that they will be unavoidable for a variety of reasons. There are several ways of reducing the negative effect of delays, such as developing time schedules, preplanning and backing up all data.

3.11.6.1 Time schedules

A time schedule is a valuable part of drawing up a proposal. However, once this has been done, the researcher would recommend leaving at least double the amount of time allocated for data collection. This allows for unpredictable circumstances, such as transport strikes, that might cause delays. On days when one is collecting data, it may be beneficial to leave several hours more than one anticipates.

3.11.6.2 Preplanning

Preplanning exactly what one intends achieving and how one intends achieving it prior to meeting teachers, learners or heads of schools is essential. One also cannot assume that because a head has given permission for research to be conducted that teachers will necessarily feel they are able or willing to assist, so it is important to ensure that they are consulted. This will also give them more time to plan, which is invaluable given the high-stress environment in which most of them are working. Developing contingency plans should teachers or schools not be able or prepared to assist with research is therefore necessary.

3.11.6.3 Backing up data

While having at least one copy, whether printed or electronic, of all data or typed/written material may seem excessive, the amount of time required to re-obtain or rewrite such material makes backup copies essential. All electronic information should be saved on both a computer and flash drive or CD. In addition, photocopying printed data and keeping it in a separate file from the original data will help reduce the chance of having to return to schools should the originals be lost or destroyed.

3.12 SUMMARY

Chapter 3 discussed the philosophical framework for this dissertation, which is pragmatism. Thereafter, the researcher discussed T-units and the experiment design and gave the research questions and hypotheses. Then, she discussed sampling and the participants as well as ethical considerations. After describing the materials and how she conducted the research, she also included the methods of data collection and processing. Following this was a discussion of limitations. Finally, the chapter ends with an indication of the challenges that the researcher faced and suggestions to avoid such pitfalls.

CHAPTER 4 RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter consists of a discussion of the two groups, deaf and hearing, by comparing their marks, grades, ages, genders and spoken home languages. The second set of results comprises inferential statistics on the ages, academic results and essays written by the deaf and hearing groups, and this is followed by a discussion of the results.

4.2 THE TWO GROUPS

4.2.1 Group 1: Deaf children

There were 30 participants in this group, all with hearing loss. No child with a slight hearing loss was included. Although such a loss may affect a child academically, the minimal loss makes it difficult to determine whether it has had such an impact. Thus, the lowest hearing loss was a mild hearing loss.

4.2.1.1 Marks

The children's 2008 marks were divided into four categories: Languages, Maths, Other Subjects, and Overall Marks. According to the school system of grading, the children in Grades 4 to 6 received a score of 1 to 4 while children in Grade 7 received a score of 1 to 7. Table 2 indicates the meaning of these scores. For data analysis purposes, to obtain valid statistics for Grade 4 to 7 learners combined, the Grade 7 scores ranging between 1 and 7 were mapped onto the same 1 to 4 range used for the Grades 4 to 6 learners using the following formula $Y=(X+1)/2$ where X is the score in the range 1 to 7 and Y the mapped score in the range 1 to 4.

Table 2: Scores for grading primary school children

	Grade 4 to 6	Grade 7
Few skills and very little knowledge and values demonstrated/not achieved	1	1
Some of the knowledge, skills and values demonstrated, but others lacking/partial achievement	2	3
Some of the knowledge, skills and values demonstrated, but with some minor limitations/satisfactory achievement	3	5
Outstanding ability is continuously demonstrated/Outstanding/excellent achievement	4	7

4.2.1.2 Grade

The grades of the children in 2008 ranged from Grades 4 to 7. Nine (30%) were in Grade 4, seven (23%) were in Grade 5, seven (23%) were in Grade 6, and seven (23%) were in Grade 7.

4.2.1.3 Age

The mean age of the children was 12.00. The youngest age was 10 and the oldest 15. Of the 30 children, seven (23%) were 10 and the other 23 (77%) were older than 10. Six children were 11, four were 12, eight were 13, three were 14, and two were 15.

4.2.1.4 Gender

Seventeen (57%) children were male, and 13 (43%) were female.

4.2.1.5 Home language

While many of the children used sign language, their home language referred to the language of those in the home where they lived. Twelve (40%) had Afrikaans as spoken

home language, four (13%) children had English as spoken home language, and Xhosa was the spoken home language of 14 (47%) children.

4.2.2 Group 2: Hearing children

There were 30 participants in this group, all hearing children. The children were selected to match the deaf children according to gender and grade rather than age as physical age and developmental age do not necessarily correlate, particularly in the case of deaf children, who typically struggle with language and learning.

4.2.2.1 Marks

The scoring method for the hearing group was the same as for the deaf group.

4.2.2.2 Grade

The grades of the children in 2008 ranged from Grade 4 to Grade 7. As the researcher needed to match up the deaf and hearing children, the results were the same: Nine (30%) were in Grade 4, seven (23%) were in Grade 5, seven (23%) were in Grade 6 and seven (23%) were in Grade 7.

4.2.2.3 Age

The mean age was 10.93. The youngest age was nine, and the oldest age was 14, making the minimum and maximum each a year earlier than those of the deaf group. Six children were nine, four children were 10, thirteen children were 11, one child was 12, five were 13, and one child was 14.

4.2.2.4 Gender

The children were matched based on gender, so these descriptive statistics are the same for both groups: Seventeen (57%) children were male, and 13 (43%) were female.

4.2.2.5 Home language

As the children were matched according to home language, the scores here are the same as for the deaf children: Twelve (40%) had Afrikaans as home language, four (13%) children had English as home language, and Xhosa was the home language of 14 (47%) children.

4.3 INFERENTIAL STATISTICS

For each child, the results of the three essays were combined to give a more accurate idea of the child's ability than would be obtained through one or two essays. In order to test the hypotheses mentioned above, the aim of the research was to look at the following:

- Fluency frequencies: the mean number of words per essay
- T-unit fluency frequencies: the mean number of T-units per essay
- Fluency ratios: the mean number of words per T-unit
- Error-free fluency ratios: the mean number of words per error-free T-unit
- Accuracy frequency: the mean number of error-free T-units per essay
- Accuracy ratio: the mean number of error-free T-units per T-units

In addition, the researcher investigated the ages of the learners as well as the marks obtained by them in 2008. The researcher worked with a statistician at NMMU, who calculated the necessary statistics based on the raw data provided by her.

In terms of the essays, age of learners and marks of learners, the following were calculated for (1) the deaf group, (2) the hearing group and (3) the difference between the hearing and deaf group:
Mean
Standard deviation
Minimum values,
Quartile 1
Median
Quartile 3

Maximum
Frequency distribution.

To determine the inferential statistics, the following instruments were used:
To determine the statistical significance based on mean differences, the t-test ($\alpha = 0.05$) was used with Cohen's d statistic to measure the effect size (practical significance). The chi-square test ($\alpha = 0.05$) was an additional measure to evaluate if the differences between frequency distributions were statistically significant with Cramer's V statistic to measure the effect size.
The limits for practical significance for Cohen's d and Cramer's V statistics are in Table 3:

Table 3: Limits for practical significance

	Cohen's d		Cramer's V (df* = 1)	
	From	To	From	To
Small	0.20	0.49	0.10	0.29
Medium	0.50	0.79	0.30	0.49
Large	0.80	plus	0.50	Plus

The following sections present and discuss the mean differences between the deaf and hearing learners with regard to their age, academic results, and the essays written by the learners.

4.3.1 Age

As indicated in Table 4, the mean difference in age between the two groups is 1.07. According to the t-test ($p = .008$) the difference is statistically significant. The observed Cohen's d statistic (0.71) indicates a medium difference. The Chi-square test was not statistically significant ($p = .262$).

Table 4: Difference in age between hearing and deaf learners

	Deaf learners	Hearing learners	Difference between deaf and hearing learners
Mean	12.00	10.93	**1.07**
Min	10.00	9.00	1.00
Quartile 1	11.00	10.00	1.00
Median	12.00	11.00	1.00
Quartile 3	13.00	11.00	2.00
Maximum	15.00	14.00	1.00
Statistical significance		**Practical significance**	
t-statistic	-2.76	Cohen's d	**0.71**
df	58		
p-value	**.008**		

The mean differences between the ages of the two groups are illustrated in Figure 1:

Figure 1: Mean difference in age between deaf and hearing learners

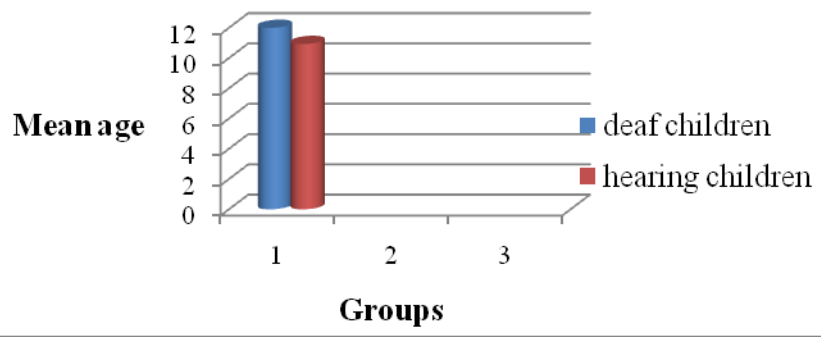


Table 5 shows the differences between the deaf and hearing groups in terms of frequency distribution for age. This table indicates that there are no significant differences between the deaf and hearing learners in age based on the frequency distribution.

Table 5: Frequency distribution: Ages of deaf and hearing children

Age	Deaf learners		Hearing learners		Difference
9	0	0%	6	20%	20%
10	7	23%	4	13%	-10%
11	6	20%	13	43%	23%
12	4	13%	1	3%	-10%
13	8	27%	5	17%	-10%
14	3	10%	1	3%	-7%
15	2	7%	0	0%	-7%
Total	30	100%	30	100%	

Statistical significance		Practical Significance	
Chi2-stat	7.68	Cramer's V	**Not applicable (p > .05)**
df	6		
p-value	**.262**		

4.3.2 Mean differences in academic results

As indicated in Table 6, the mean differences between the hearing and deaf groups are 0.16 for languages and 0.38 for Maths. The mean difference for other subjects is 0.12 and 0.23 for the overall mark. Based on the t-test and the chi-square test, there are no significant differences between the hearing and deaf groups in terms of the mean or frequency distribution. Therefore, Cohen’s d and Cramer’s V are not applicable.

Table 6: Differences in academic results between hearing and deaf children

	Languages	**Maths**	**Other subjects**	**Marks overall**
Results of deaf children				
Mean	2.91	2.93	3.01	2.73
Min	1.00	1.00	1.20	1.07
Quartile 1	2.00	2.25	2.60	2.30
Median	3.00	3.00	3.00	2.67
Quartile 3	3.63	3.50	3.40	3.37
Maximum	4.00	4.00	4.00	4.00
Results of hearing children				
Mean	3.07	3.32	3.13	2.97
Min	2.00	2.00	1.90	1.57
Quartile 1	2.69	3.00	2.73	2.38
Median	3.00	3.25	3.20	3.03
Quartile 3	3.33	4.00	3.40	3.56
Maximum	4.00	4.00	4.00	4.00
Mean difference between hearing and deaf children				
Statistic	**Languages**	**Maths**	**Other subjects**	**Marks overall**
Mean	**0.16**	**0.38**	**0.12**	**0.23**
Min	1.00	1.00	0.70	0.50
Quartile 1	0.69	0.75	0.13	0.08
Median	0.00	0.25	0.20	0.37
Quartile 3	-0.29	0.50	0.00	0.19
Maximum	0.00	0.00	0.00	0.00
Statistical significance				
t-statistic	0.83	1.91	0.81	1.20
df	58	58	58	58
p-value	.410	.061	.423	.236

Figure 2 illustrates the mean differences between the academic scores of the two groups:

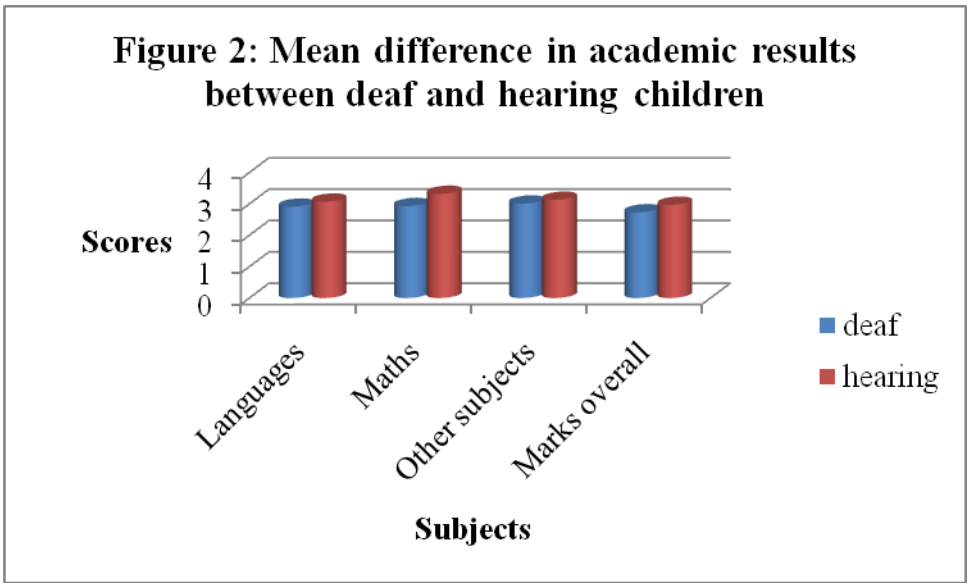


Table 7 shows the frequency distribution for the academic marks of the deaf and hearing children, which, as mentioned above, also does not indicate any significant differences.

Table 7: Frequency distribution: Marks of children

Languages	**Deaf**		**Hearing**		**Difference**
2.69	11	37%	8	27%	-10%
3.33	10	33%	15	50%	17%
9999.00	9	30%	7	23%	-7%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	1.72		Cramer's V		**Not applicable (p > .05)**
df	2				
p-value	**.422**				
Maths	**Deaf**		**Hearing**		**Difference**
3.00	21	70%	15	50%	-20%
4.00	9	30%	15	50%	20%
9999.00	0	0%	0	0%	0%

TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	2.50		Cramer's V		**Not applicable (p > .05)**
df	1				
p-value	**.114**				
Other subjects	**Deaf**		**Hearing**		**Difference**
2.73	9	30%	8	27%	-3%
3.40	14	47%	15	50%	3%
9999.00	7	23%	7	23%	0%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	0.09		Cramer's V		**Not applicable (p > .05)**
df	2				
p-value	**.954**				
Marks overall	**Deaf**		**Hearing**		**Difference**
2.38	8	27%	8	27%	0%
3.56	18	60%	14	47%	-13%
9999.00	4	13%	8	27%	13%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	1.83		Cramer's V		**Not applicable (p > .05)**
df	2				
p-value	**.400**				

4.3.3 Essays

Analysis of the essays revealed highly significant differences in the writing ability of deaf and hearing children. The essays focused on the following areas in order to answer the six hypotheses.

- Hypothesis 1: Fluency frequencies: the mean number of words per essay
- Hypothesis 2: T-unit fluency frequencies: the mean number of T-units per essay
- Hypothesis 3: Fluency ratios: the mean number of words per T-unit
- Hypothesis 4: Error-free fluency ratios: the mean number of words per error-free T-unit
- Hypothesis 5: Accuracy frequency: the mean number of error-free T-units per essay
- Hypothesis 6: Accuracy ratio: the mean number of error-free T-units per T-units

As Table 8 shows, the mean differences were highly significant.

Table 8: Mean differences in essay marks between deaf and hearing children

	Fluency frequencies: the mean number of words per essay	**T-unit fluency frequencies: the mean number of T-units per essay**	**Fluency ratios: the mean number of words per T-unit**	**Error-free fluency ratios: the mean number of words per error-free T-unit**	**Accuracy frequency: the mean number of error-free T-units per essay**	**Accuracy ratio: the mean number of error-free T-units per T-units**
Essays of deaf children						
Mean	124.97	17.17	5.11	3.30	8.60	0.28
Min	0.00	0.00	0.00	0.00	0.00	0.00
Quartile 1	10.25	3.00	3.00	0.00	0.00	0.00
Median	22.00	5.50	4.55	2.50	2.00	0.26
Quartile 3	147.00	19.75	6.82	5.91	7.75	0.50
Maximum	657.00	73.00	13.16	9.87	52.00	0.96
Essays of hearing children						
Mean	457.43	50.70	9.20	8.29	36.70	0.72
Min	118.00	12.00	6.54	5.55	11.00	0.43
Quartile 1	313.75	34.00	7.58	6.81	24.25	0.63
Median	433.00	52.50	8.81	8.23	34.00	0.72
Quartile 3	544.25	61.25	10.45	9.78	47.00	0.86
Maximum	972.00	110.00	12.52	11.39	95.00	0.92
Mean difference between hearing and deaf children						
Mean	**332.47**	**33.53**	**4.09**	**4.99**	**28.10**	**0.44**
Min	118.00	12.00	6.54	5.55	11.00	0.43
Quartile 1	303.50	31.00	4.58	6.81	24.25	0.63
Median	411.00	47.00	4.26	5.73	32.00	0.46
Quartile 3	397.25	41.50	3.63	3.87	39.25	0.36
Maximum	315.00	37.00	-0.64	1.52	43.00	-0.05
Statistical significance						
t-statistic	6.96	6.05	6.31	7.59	6.64	7.77
df	58	58	58	58	58	58
p-value	**<.0005**	**<.0005**	**<.0005**	**<.0005**	**<.0005**	**<.0005**
Practical significance						
Cohen's d	**1.80**	**1.56**	**1.63**	**1.96**	**1.72**	**2.01**

The frequency distributions also indicated significant differences between the two groups, as seen in Table 9:

Table 9: Essay marks of children: Frequency distribution

Fluency frequencies	**Deaf**		**Hearing**		**Difference**
313.75	25	83%	8	27%	-57%
544.25	4	13%	14	47%	33%
9999.00	1	3%	8	27%	23%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	17.71		Cramer's V		**0.52**
df	2				
p-value	**<.0005**				
T-unit fluency frequencies:	**Deaf**		**Hearing**		**Difference**
34.00	24	80%	9	30%	-50%
61.25	4	13%	13	43%	30%
9999.00	2	7%	8	27%	20%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	15.18		Cramer's V		**0.50**
df	2				
p-value	**.001**				
Fluency ratios	**Deaf**		**Hearing**		**Difference**
7.58	24	80%	8	27%	-53%
10.45	5	17%	14	47%	30%
9999.00	1	3%	8	27%	23%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	15.84		Cramer's V		**0.49**
df	2				
p-value	**<.0005**				
Error-free fluency ratios	**Deaf**		**Hearing**		**Difference**
6.81	25	83%	8	27%	-57%
9.78	4	13%	14	47%	33%
9999.00	1	3%	8	27%	23%
TOTAL	30	100%	30	100%	

Statistical significance			Practical significance		
Chi2-stat	17.71		Cramer's V		**0.52**
df	2				
p-value	**<.0005**				
Accuracy frequency	**Deaf**		**Hearing**		**Difference**
24.25	26	87%	8	27%	-60%
47.00	3	10%	16	53%	43%
9999.00	1	3%	6	20%	17%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	18.15		Cramer's V		**0.50**
df	2				
p-value	**<.0005**				
Accuracy ratio	**Deaf**		**Hearing**		**Difference**
0.63	27	90%	8	27%	-63%
0.86	2	7%	14	47%	40%
9999.00	1	3%	8	27%	23%
TOTAL	30	100%	30	100%	
Statistical significance			**Practical significance**		
Chi2-stat	22.21		Cramer's V		**0.58**
df	2				
p-value	**<.0005**				

As the charts indicate, the mean differences between deaf and hearing children are significant in all categories. In each case, the results of the hearing group are significantly higher than the results of the deaf group, and the size of the difference is usually large.

4.3.4 Discussion

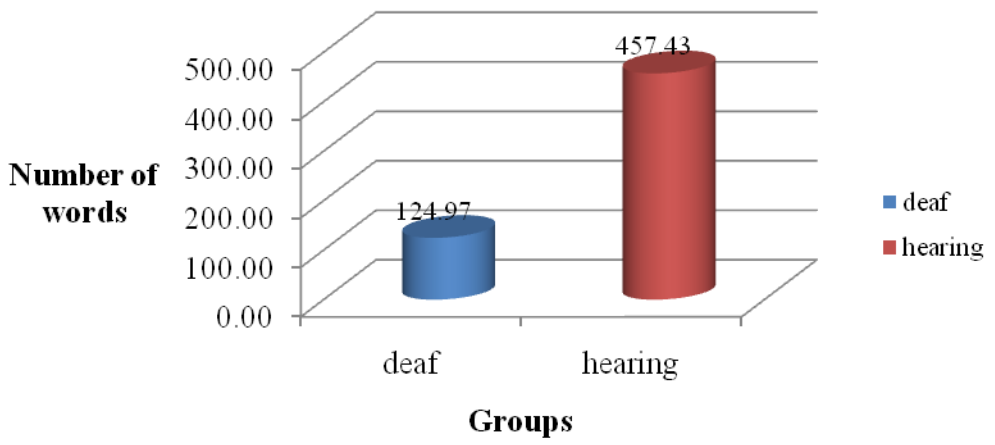
The results from the previous sections on the inferential statistics indicate that deafness has a significant impact on the academic and writing abilities of deaf children. For instance, the significant difference in the mean ages of the children (see Table 4) is in line with deaf children's later language, reading, writing and academic development, which one would expect to result in deaf children being in earlier grades than hearing children of the same age. The inferential statistics containing the results pertaining to

the six hypotheses show that all of the differences between the deaf group and hearing group are statistically significant. In terms of the mean difference, the size of the difference is large for all six categories. In terms of frequency, the size of the difference is medium for the mean number of words per T-unit while for all other categories, the difference is large.

Hypothesis 1: Fluency frequencies: There is a significant difference between the mean number of words per essay produced by deaf children and the mean number of words per essay produced by hearing children.

The results indicate that there is a significant difference between the mean number of words per essay written by deaf children and the mean number of words per essay written by hearing children. As it is "generally accepted that more developed learners write longer compositions" (van der Walt and Hattingh 2007, 21), it appears that hearing children have a significant advantage over deaf children. This is illustrated in Figure 3:

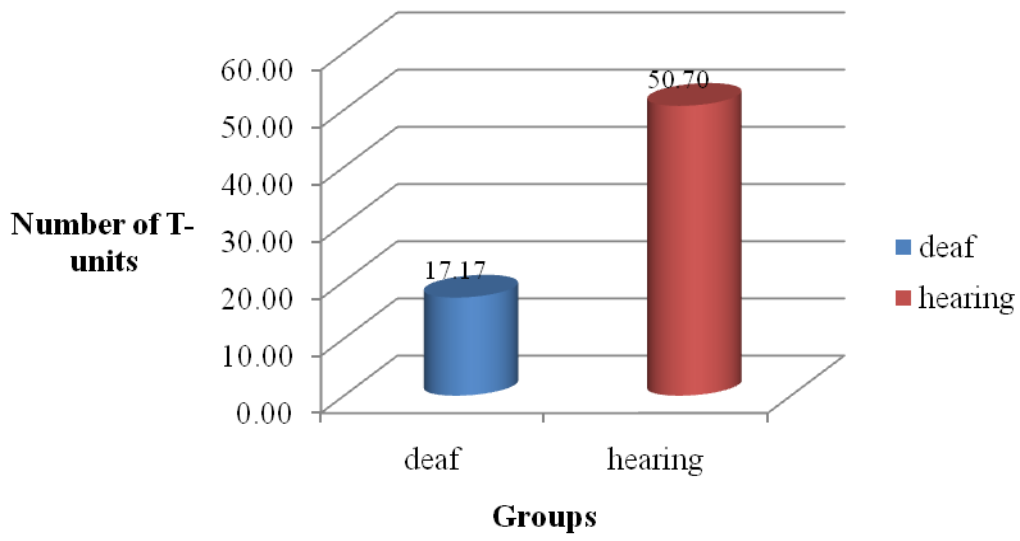
Figure 3: Fluency frequencies: The mean number of words per essay



Hypothesis 2: T-unit fluency frequencies: There is a significant difference between the mean number of T-units per essay produced by deaf children and the mean number of T-units per essay produced by hearing children.

This is evident in Figure 4, which shows the differences in the fluency frequencies of the two groups. The mean number of T-units produced by deaf children was less than half of the mean number of T-units written by hearing children.

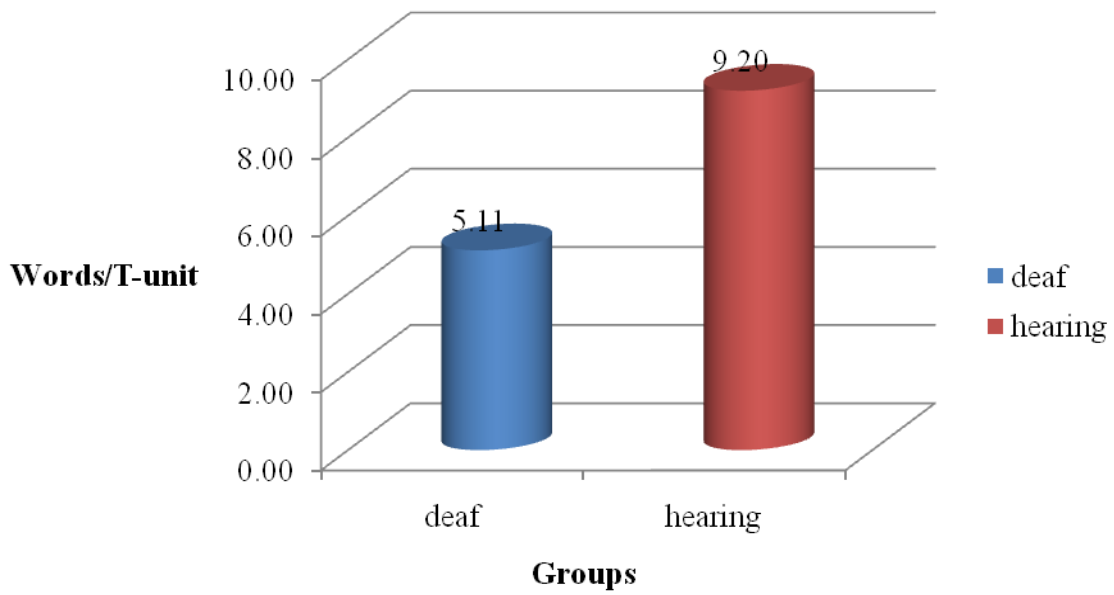
Figure 4: Fluency frequencies: The mean number of T-units per essay



Hypothesis 3: Fluency ratios: There is a significant difference between the mean number of words per T-unit produced by deaf children and the mean number of words per T-unit produced by hearing children.

The ratio of the mean number of words per T-unit produced by the deaf group (see Figure 5) shows that, in addition to the deaf group's writing far fewer words, this group also uses far fewer words per T-unit. This suggests that the members of the hearing group are writing far more complex T-units than the deaf group.

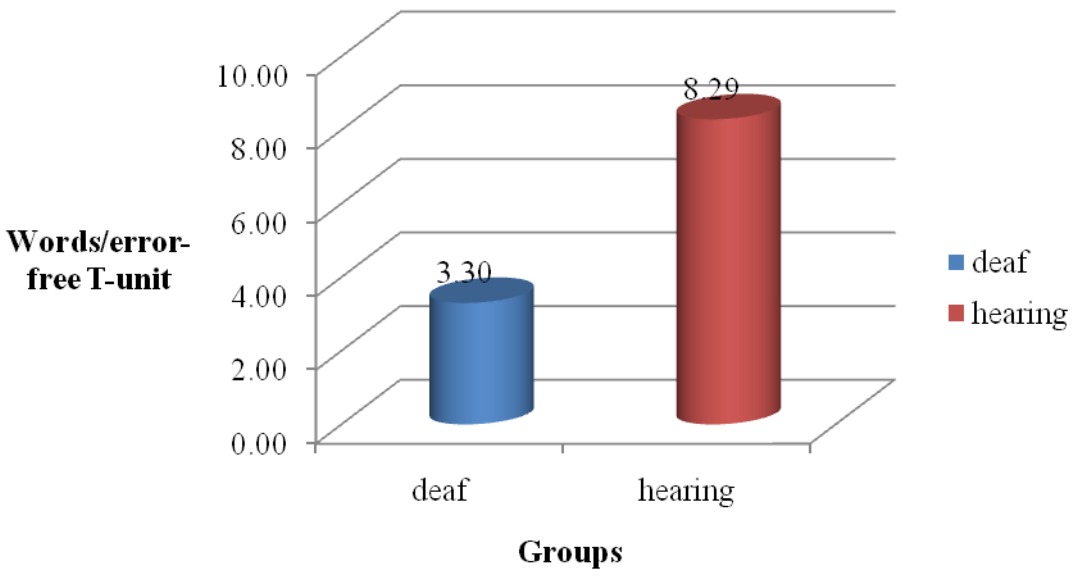
Figure 5: Fluency ratio: The mean number of words per T-unit



Hypothesis 4: Error-free fluency ratios: There is a significant difference between the mean number of words per error-free T-unit produced by deaf children and the mean number of words per error-free T-unit produced by hearing children.

Figure 6 illustrates that the mean number of words per error-free T-unit for the deaf group is less than half the mean number of words per error-free T-unit for the hearing group. Thus, the deaf learners are also producing significantly shorter error-free T-units:

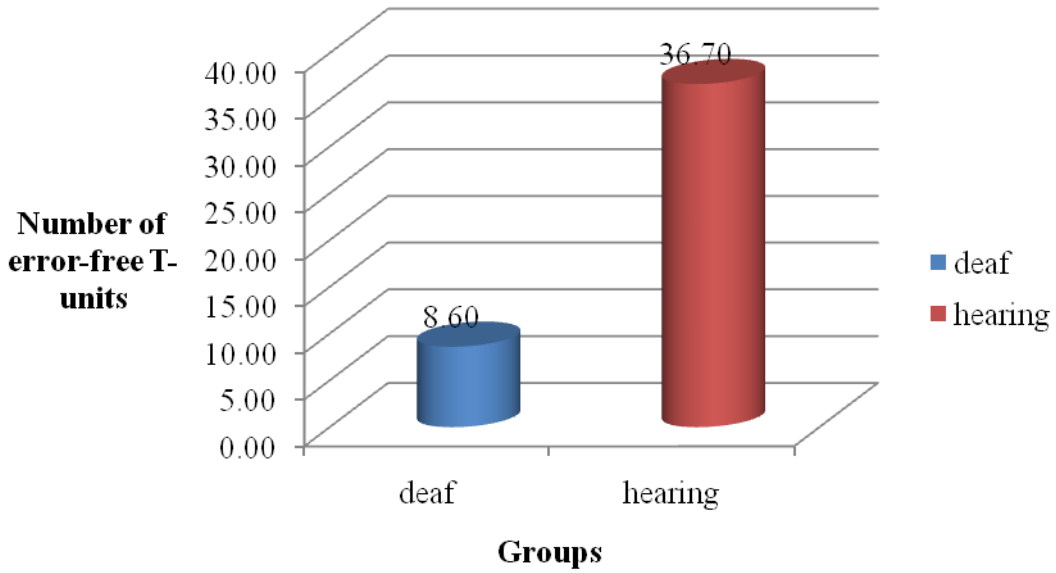
Figure 6: Error-free fluency ratios: The mean number of words per error-free T-unit



Hypothesis 5: Accuracy frequency: There is a significant difference between the mean number of error-free T-units per essay produced by deaf children and the mean number of error-free T-units per essay produced by hearing children.

Error-free writing is important as it increases the credibility of a learner's writing as well as making it easier to read. The significantly higher mean number of error-free T-units per essay written by the hearing children indicates that their work is likely to be viewed as more credible and to be seen as more readable than that of deaf children. Figure 7 indicates the differences in the mean number of error-free T-units per essay:

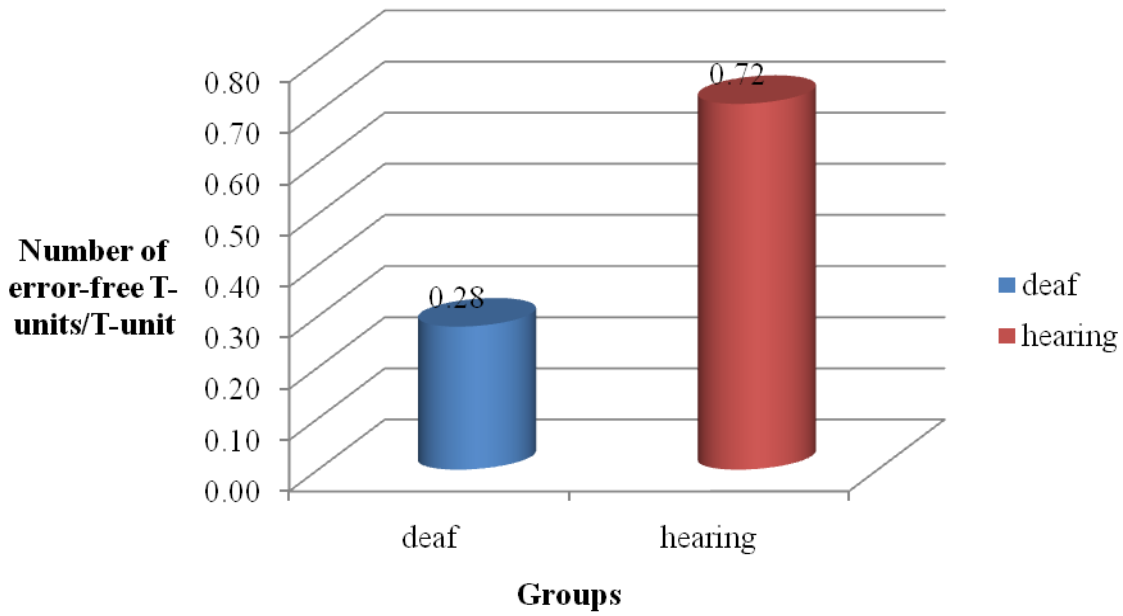
Figure 7: Accuracy frequency: The mean number of error-free T-units per essay



Hypothesis 6: Accuracy ratio: There is a significant difference between the mean number of error-free T-units per T-units produced by deaf children and the mean number of error-free T-units per T-units produced by hearing children.

As shown in Figure 8, the mean number of error-free T-units per T-units was far lower than that of the hearing children, indicating that the accuracy of hearing children is much greater than that of deaf children.

Figure 8: Accuracy ratio: The mean number of error-free T-units per T-units



Overall, the results for the data on the essays indicate that deaf children in the Nelson Mandela Metropole struggle a great deal more than hearing children in writing English. This is particularly worrying as there is no significant difference between the academic results of the two groups. Based on academic scores, deaf children in the Nelson Mandela Metropole appear to have no problems with schoolwork in general or with languages. The analysis using T-units indicates that this is misleading. This in turn calls into question the validity of the scoring system used to grade the academic abilities of children.

Furthermore, these results mean that deaf children may face greater challenges than hearing children in completing their school education and in pursuing higher education. Even those who are hearing may often struggle with written language. For instance, van der Walt and Hattingh (2007, 15) in their study of ESL matric learners, conclude that the results "paint a poor picture of learners' performance in writing, and suggest that Grade 12 ESL learners are ill-prepared for tertiary study." For children with the added challenge of deafness, finishing high school and further education are likely to be significantly more challenging.

4.4 SUMMARY

Chapter 4 contained an overview of the deaf and hearing groups in the form of a comparison of their marks, grades, ages, genders and spoken home languages. In addition, the second set of results comprises inferential statistics on the ages, academic results and essays written by the deaf and hearing groups. The chapter ends with a discussion of the results.

CHAPTER 5 RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 4 indicates that the writing of the deaf children in this study is significantly weaker than that of the hearing children. Based on these findings, the following section contains a literature review suggesting recommendations to improve the writing of deaf children. Chapter 7 contains a discussion of the findings of qualitative research, in the form of interviews, in order to consider the validity of the researcher's recommendations in Chapter 5.

In the first literature review, Chapter 2, the researcher discussed emergent literacy, which indicates that oral language, reading and writing, develop from a very early age, with research suggesting that language acquisition begins in the womb. Based on these findings, the first recommendation is that South Africa develops universal newborn hearing screening (UNHS). If screening indicates a hearing loss, this identification is useless without follow-up to assist the deaf child, so the second recommendation is intervention and the need for government involvement to make newborn hearing screening and intervention a reality. The third recommendation returns to the controversy surrounding the language of choice for deaf children and comprises suggestions regarding which language the child should acquire from his or her parents/guardians: speech (which will probably result in his or her following the natural auralism route) or sign language (which is likely to result in sign bilingual education/Total Communication). The role of the government is also touched on here. Finally, the last recommendation looks at how those responsible for a child's education - parents/guardians and teachers - can encourage deaf children to develop good writing skills, both bottom-up and top-down.

5.2 UNHS

There is a growing need to tackle the problem of hearing loss worldwide. This is evident in a resolution which the World Health Assembly (WHA) passed in 1995 on ending the increasing problem of preventable deafness (WHA 1995, par.1-3). As the

WHA (1995, par. 4) notes, severe deafness is a “particularly serious obstacle” to schooling and development, including the acquisition of language. The literature review in Chapter 2 indicates that written language depends on the acquisition of spoken language and, if this is not available, possibly on the acquisition of sign language. Based on the emergent literacy theory, language acquisition, and therefore identification of deafness, needs to happen early. The WHA supports this, urging “early detection in babies, toddlers, and children” (WHA 1995, under “Urges Member States”).

The response to the need for early identification has been UNHS, which has become routine in developed countries (Olusanya 2007, 0629). In America, for example, the first states passed UNHS laws at the start of the 1990s, and by 2005, laws were in place in 37 states which either mandated or recommended newborn screening (Green et al. 2007, 199). By 2008, “46 states, 2 territories, and the District of Columbia . . . [had] early hearing detection and intervention laws or voluntary compliance programs that screen hearing” (Hollenbeck 2008, 78). This wide coverage results in an infant screening percentage of 95%, generally occurring prior to their leaving hospital (Hollenbeck 2008, 78). Other developed countries with UNHS programmes include the UK, Austria, Australia, Italy, the Netherlands (Olusanya and Roberts 2006, 374).

The following section contains an investigation of the reasons for UNHS as well as drawbacks of newborn screening. After this is a discussion of the detection of hearing loss in developing countries and the use of immunisation clinics because of the low number of hospital births. Thereafter follows an analysis of hearing screening in South Africa and the results of a pilot infant screening project.

5.2.1 Reasons for UNHS

While there has been some debate over the impact of UNHS on language development, there is strong evidence indicating that it makes a valuable contribution in developing the linguistic skills of deaf children. Profant et al. (2008, 369) note that when UNHS identifies hearing loss, early intervention for the deaf child results in a significant increase in the acquisition of spoken language in comparison with a child undergoing later screening and intervention. A study by Yoshinaga-Itano et al. (1998, 1169) shows “significantly better receptive and expressive language skills” in children identified by

the age of six months as opposed to those whose hearing loss is identified later. The position statement of the Joint Committee on Infant Hearing (JCIH) (2007, 898) in America requires hearing screening for all babies by the age of one month and "comprehensive audiological evaluation at no later than 3 months" for those whose initial screening indicates a hearing loss. According to the JCIH (2007, 898), babies with hearing loss need to begin intervention by the age of six months.

Besides the timing of UNHS, which results in a positive impact on language acquisition, the other important aspect which makes it effective is the type of screening done. Olusanya (2001, 142) explains the value of new screening methods: Previously, identification of deafness was subjective and based on methods like "parental suspicion, distraction tests, play audiometry, and visual reinforcement audiometry." Recent advanced technology used to test babies includes oto-acoustic emissions (OAE) and auditory brainstem response (ABR). These developments in technology allow for the collection of large amounts of empirical data related to congenital deafness.

Third, UNHS, because its aim is to screen all newborn babies, helps to identify the large number of children who are deaf although not presenting with any risk factors. This has identified many children whose hearing loss would otherwise initially have gone undetected. In America, high-risk screening took place for decades yet "failed to identify a large cohort of children in the first year of life" (Yoshinaga-Itano 2003, 265). Of those children who are deaf, only 50% are known to be at risk (Yoshinaga-Itano 2003, 265). Furthermore, before UNHS, detection of congenital hearing loss in the US only happened, on average, at the age of two and by the time children reached preschool they were experiencing significant developmental setbacks (Yoshinaga-Itano 2003, 253).

Because of the above benefits, another reason for UNHS is the moral motivation behind it. According to a summary of a presentation by Durieux-Smith (2004, under "Universal Newborn Hearing Screening: A Question of Evidence") at the 3rd Widex Congress of Paediatric Audiology in Copenhagen, Denmark, justification for UNHS is to be found in ethical reasons, such as "the child's right to hear and the child's right to communicate with parents and significant others." Olusanya (2007, 0629) also discusses the ethical

basis of UNHS, stating that governments have a moral duty to educate parents on early identification and intervention.

5.2.2 Negative effects of UNHS

A negative result of UNHS is false-positive results, meaning that the results of a test incorrectly show that a baby without hearing loss has tested positive for deafness. There are fears that this could cause extended anxiety for parents and negatively impact the relationship between parent and child (Hollenbeck 2008, 78). However, a survey by Clemens et al. (2000, 1) shows that only "9% of mothers said they 'treated their child differently' before outpatient rescreening, and only 14% reported any lasting anxiety after their child passed the outpatient repeat screen." Moreover, more than 90% of mothers were in favour of UNHS (Clemens et al. 2000, 1).

5.2.3 Detection of hearing loss in developing countries

While UNHS programmes take place in many developed countries and while there are pilot programmes in developing lands like Malaysia (Olusanya 2007, 0629), regular screening does not happen in developing countries. According to Olusanya (2007, 0629), at present, "global health priorities for developing countries have yet to pay attention to the WHA resolution" which supports testing at an early age. It is these countries, containing two-thirds of children worldwide (The University of Hong Kong n.d., under "Current Research Projects"), where the UNHS is most needed**.** According to the World Health Organisation (WHO) (2006b), many deaf people come from developing countries:

> In the year 2005 there were 278 million people in the world with disabling hearing impairment (moderate or worse average hearing impairment of 41dB or greater in the better ear in adults and 31 dB or greater in children up to age 15 years); of these the loss began in childhood in 68 million people, and in adulthood in 210 million people. A further 364 million people are estimated to have a mild hearing loss . . . Two thirds of the burden of hearing impairment is in developing countries and the estimates have increased progressively since they were first made in 1986.

Children from developing countries are at high risk of hearing loss because of conditions that can cause deafness, such as rubella and meningitis (International Federation of Oto-Rhino-Laryngological Societies 2003, 1).

Major barriers to UNHS programmes in developing countries are costs and resources. For instance, Kileny and Jacobsen (2000, 65), estimate the cost per diagnosis at $100 000 and $300 000. Olusanya's figure suggests that costs may be lower, at more than $35 000 for the cost of identifying a deaf child (Olusanya 2001, 142). However, either way, the costs are extremely high. On the other hand, the cost of not implementing UNHS is equally daunting. This is evident in statistics on America: According to the WHO (2001, par. 6), the economic burden of deafness is tremendous: In America, the "cost of communication disorders in that country (due to rehabilitation, special education and loss of employment) is almost 3% of the gross national product." Research by Mohr et al. (2000, abstract) recommends early identification and medical intervention after findings that the cost to society of someone with severe to profound deafness is $297,000 over the period of an individual's life, and the costs per person over a lifetime for those with prelingual deafness is more than $1 million.

5.2.4 Adapting UNHS to conditions in developing countries: immunisation clinics

Models of UNHS used in developed countries may not be appropriate in developing countries and may therefore require adaptation. For instance, in developing countries, especially Sub-Saharan Africa and South Asia, many births do not take place in hospitals. A pilot study done by Olusanya et al. (2008, 956) is a case in point. Between July 2005 and April 2006, community health workers successfully tested the hearing of 2003 (88%) out of 2277 babies for permanent congenital and early-onset hearing loss (PCEHL) in Lagos, Nigeria. Only 898 (44.8%) of the 2003 births had taken place in a hospital (Olusanya et al. 2008, 958). In South Africa too, a "significant number of births" happen at home or at clinics (Swanepoel et al. 2006, 1243)

Thus, given the low number of births taking place in hospitals, a more viable alternative to hospital testing may be to test babies at immunisation clinics. The effectiveness of this method is clear in the above-mentioned research on 2003 babies conducted by

Olusanya et al. (2008, 956-963) in Nigeria. Another important discovery which emerged from this research was the effectiveness of using community health workers, after providing focused training to teach them to test for PCEHL (Olusanya et al. 2008, 959). A further advantage of this approach is that it allows for testing while babies are still relatively young: The mean screening age was 17.7 days with a standard deviation of 19.1 days (Olusanya et al. 2008, 958), which shows that "hearing screening can be offered to the majority of babies within the first month of life, thereby making it possible to identify infants with congenital or early-onset hearing loss and still provide intervention services for speech and language development before the age of 6 months" (Olusanya et al. 2008, 960).

5.2.5 Hearing screening in South Africa

At present, there is no nationwide hearing screening in South Africa, a country which has both private and public health care. The majority of people are part of the public sector, which is "under-resourced and over-used" (South Africa.info n.d., under "Health Care in South Africa") although there is also a private sector which provides high-quality care to a minority (South Africa.info n.d., under "Health Care in South Africa"). According to Swanepoel et al. (2009, 784-785), newborn hearing detection in the private sector does happen but is "mostly dependent on individual initiatives from private practice audiologists in hospitals but is not mandated by hospital management and therefore remains mostly unstructured [,] unsystematic and only available in certain hospitals." In the public sector, a small number of hospitals provide screening. In a study of newborn/infant hearing screening programmes, Theunissen and Swanepoel (2008, S23) show that only 27% of public sector hospitals have some kind of hearing screening. Thus, identifying hearing loss usually happens passively when parents become concerned (Swanepoel, Delport et al. 2007, 3).

In addition to the small amount of screening happening in both the private and public sectors, this screening misses out the large number of babies born outside of hospitals in South Africa. As evident from the research by Olusanya et al. (2008, 956-963.), an alternative is the use of immunisation clinics for hearing testing. In South Africa, immunisation clinics are also viable: Using figures from the Department of Health (2008, par. 13), in 2007/2008, 84% of children under the age of one were fully

immunized. An infant screening pilot study was conducted at two immunisation clinics (Swanepoel et al. 2006, 1241). According to Swanepoel and Louw et al. (2007, 322), all babies, ranging from newborns to children of 12 months, who visited the clinics in a 5-month time frame were part of the programme.

5.2.6 Results of screening process in study by Swanepoel and Louw et al.

The benefits of the hearing screening process show that it is a feasible option in South Africa. For unilateral screening, the researchers had 95% coverage. For bilateral screening, they obtained 93% (Swanepoel, Louw, et al. 2007, 323).

While these positive results indicate the advantages of such screening, the researchers also identified the main screening barriers of inadequate follow-up return rate. Of those who received screening referrals, just 40% came back to enable re-screening. Subsequently, this percentage dropped to 11% for those coming back for diagnostic assessments (Swanepoel, Louw, et al. 2007, 323). However, a solution would be to do follow-up appointments with subsequent immunisation appointments (Olusanya et al. 2004, 298; Swanepoel, Louw, et al. 2007, 322, 323).

5.2.7 Results of screening context in study by Swanepoel et al.

While the benefits of the screening process appear to outweigh disadvantages, the screening *context*, namely the use of immunisation clinics, also provided both pros and cons. A major advantage of the test environment was the sufficiency of supplies (such as electricity, disinfectants and water) and room, while a disadvantage was that clinics did not have the low noise levels required for testing. On the contrary, high noise levels resulting from staff, waiting areas and maintenance was the most predominant difficulty identified by the researchers (Swanepoel, Louw, et al. 2007, 323).

Another barrier was that of language, as many caregivers/parents of the screened infants struggled with English. A potential solution would be to ask nurses to translate, which sometimes happened during the studies. An additional barrier highlights the importance of educating parents/caregivers about hearing loss as they had minimal understanding of the consequences of deafness and the necessity for early intervention.

However, on the other hand, an advantage experienced at the immunisation clinics was that nurses provided some information by recommending that caregivers test their children and explained how this would take place. Furthermore, most of the caregivers were “very positive” about having their babies tested (Swanepoel, Louw, et al. 2007, 323).

5.3 INTERVENTION AFTER IDENTIFICATION OF DEAFNESS

While UNHS has improved identification of deafness significantly in developed countries and promises to do so in developing countries that institute newborn screening, identification is meaningless unless it precedes intervention which retains the maximum number of children in the system. This does not always happen, in developed or developing countries. For instance, according to a “Hearing Screening and Follow-up Survey” by the Centers for Disease Control and Prevention (CDC) (2007, 1) on 44 US states and two territories, of 3950 infants with hearing loss who received documented referral for early intervention, 35.7% did not receive early intervention: In 4.5% of cases, the baby died or the parent refused services, and in 1.8% of cases, the family moved, leaving 29.4% of infants who did not receive intervention. Olusanya (2006, 397) also refers to the problem of “high default rates for follow-up services” in pilot infant screening programmes in developing countries. In South Africa, an average lapse in time of 10 months occurs between diagnosis and the child’s being referred for early intervention, which indicates that professionals are not telling parents about the value of early intervention as soon as they are able after diagnosis (Storbeck and Calvert-Evers 2008, 317).

To try to ensure maximum intervention for the maximum number of children, Early Hearing Detection and Intervention (EHDI) programmes are necessary. For instance, EHDI programmes used in American states not only incorporate UNHS but also attempt to follow up on newborns with hearing loss (Green et al. 2007, 199). These states use federal financing for the improvement of EHDI programmes and to put in place effective tracing systems (Green et al. 2007, 199). According to Green et al. (2007, 199), tracking assists states to “monitor their programs and ensure that infants and children receive recommended screening and follow-up services.”

While continued services are essential in order for early detection to be effective, developing countries face a range of problems. One is determining the service delivery structure. Second, according to Olusanya and Okolo (2006, 367), there may be insufficient skilled personnel and ancillary help. Another hurdle, as with hearing testing, is the cost of intervention. These three challenges are dealt with in more detail below in an EDHI programme designed for a South African context, followed by a discussion of an intervention programme called HI HOPES.

5.3.1 Follow-up in a South African context

Based on the pilot studies in South African immunization clinics, Swanepoel and Louw et al. (2007, 323-326) have devised a service delivery model to provide infant hearing screening via an EHDI programme. This model is three-pronged. It consists of the following:

1. Service delivery structure
2. Role players and responsibilities
3. Screening protocol

5.3.1.1 Service delivery structure

The service delivery structure will consist of three levels: primary, secondary and tertiary. At the primary level, screening would take place at immunisation clinics, where caregivers/parents whose children have treatable deafness, caused by otitis media (inflammation of the middle ear), would also be helped. Community nurses and volunteers would send on babies who do not pass the first and follow-up screening, as well as those with serious treatable deafness, to a secondary level, an audiologist at a regional hospital. The audiologist would provide a diagnosis and early intervention, such as hearing aids. For babies needing more specialized assistance, the audiologist would refer the child to an audiology/ENT clinic at a provincial hospital.

5.3.1.2 Role players and responsibilities

The key role players are caregivers, audiologists, and nurses or volunteers. The part the family plays is essential and it needs to be an equal role player because family intervention is necessary for the child's success (see Mencher et al. 2001, 8). Wider families, communities, should also be informed about, and involved in, issues relating to deafness. For instance, volunteers from the community could help with hearing screening. Audiologists are also important and should oversee the screening programme (see Health Professions Council of South Africa 2002, 1-8). Community-based nurses in primary healthcare would be suitable as the first screeners as they would come into contact with babies going to immunisation clinics. Volunteers could also be helpful in reducing the work of the nurses because of the limited resources in South Africa and because they could improve communication with caregivers if they can speak an African language. The volunteer would need training on how to screen and also on teaching caregivers about why follow-up appointments are important and what the consequences of late detection of deafness and the advantages of early intervention are. The audiologist could give this training.

5.3.1.3 Screening protocol

The screening protocol is based on trying to balance cost effectiveness and standards of developed countries. For instance, for cost reasons, and because of insufficient resources, Swanepoel and Louw et al. (2007, 326) recommend using a "unilateral OAE pass criterion." While this approach will identify children with bilateral hearing loss, those needing intervention the most, a concern is that unilateral deafness has also been shown to impact on children's development, so a recommendation is that this should only be an interim approach until the programmes have enough capacity to include unilateral deafness.

5.3.2 HI HOPES

Another intervention project is that of HI HOPES. Storbeck and Calvert-Evers (2008, 314-321) discuss this approach in their article "Towards Integrated Practices in Early

Detection of and Intervention for Deaf and Hard of Hearing Children": HI HOPES stands for **H**ome **I**ntervention - **H**earing and Language **O**pportunities **P**arent **E**ducation **S**ervices and began in August 2006, with funding from the Nelson Mandela Children's Fund, in Gauteng. The aim of the programme is home-based assistance for families with a deaf child between the ages of nought and three. HI HOPES is available to all and is free. Based on SKI-HI, an early intervention programme in America, HI HOPES has a "non-biased" (Storbeck and Calvert-Evers 2008, 315) philosophy in that it assists families, regardless of whether they want their children to learn speech or sign. The first step was a detailed consultation process with members of the medical and deaf community as well as other stakeholders, such as the Deaf Federation (DEAFSA). Following this was recruitment and training of volunteers to be parent advisors (early interventionists) or deaf mentors, who are role models for the families.

After registration of a family with the programme, family support and service delivery begins. As far as possible, parent advisors are matched up with families in terms of factors such as religion and communication styles. Parent advisors usually visit a family once a week and have one to one and a half hour sessions in their home "sharing information, giving guidance, counsel, and support to parents" (Storbeck and Calvert-Evers 2008, 318). The active involvement of the parents in these visits and in decision making is vitally important as they try to decide about the use of hearing aids/technology and language development and language choice. The parent advisors then help the family to carry out the approach that they have chosen. Besides the parent advisors, there is also the option for parents to have a weekly visit from a deaf mentor, who "acts as language model (whatever the language of choice of the family), shares communication strategies with the family, and if they choose South African Sign Language (SASL) teaches sign language to both the infant and family" (Storbeck and Calvert-Evers 2008, 318). Another vital element of the programme is tracking the development of the child, using instruments such as an assessment of holistic development as well as language development every four months.

5.4 LANGUAGE OF CHOICE

Early detection and intervention are both essential for a deaf child, regardless of whether he or she learns sign language or spoken language. The researcher comes from

an oral background and has a postlingual hearing loss, which naturally biases her towards the medical model and the development of spoken language. In a developed country, with technology more readily available, she would undoubtedly lean more towards natural auralism. However, in a developing country, such as South Africa, the situation is more complex.

For some children, learning speech will only be possible if the child receives a cochlear implant. In South Africa, the state usually does not pay for cochlear implantation, and the high cost means that "many children are excluded from access to this service" (Noorbhai 2002, 71). A recent exception is at Chris Hani Baragwanath Hospital in Johannesburg, where the first state-funded cochlear implant programme in Gauteng was started in 2006. Cochlear implants cost over R200 000, and as of 6 August 2009 seven adults and one child have had successful operations (Department of Health and Social Development 2009, par. 1, 2, 4, 5). According to the Department of Health and Social Development (2009, par. 7), the cochlear implant unit "has a large number of patients who would benefit from the device." Swanepoel et al. (2009, 784), note that approximately 6116 babies every year or 17 per day have "permanent bilateral hearing loss" at birth or will develop it within a few weeks after birth. Most of these babies (about 92%) will be part of the public health sector (Swanepoel et al. 2009, 784) and therefore will have limited access to cochlear implants, should these be needed.

On the other hand, sign language also has disadvantages. If the child cannot, or does not, also learn speech, he or she will be cut off from participating in the hearing world to a large extent and may face teasing (Ladd 2003, 33). Parents/guardians who, based on the critical period hypothesis, are beyond the age when language acquisition comes most easily, will need to learn a new language in order to communicate with their child. In addition, learning sign language holds many educational challenges, as indicated by DEAFSA (2009, under "Deaf Education"): Firstly, while there are 600 000 South Africans for whom SASL is a primary language, there are only 12 schools for the Deaf with a Grade 12 year. In addition, a very small percentage (14%) of teachers in schools for the Deaf are fluent in sign language, which is not a school subject. Furthermore, just two Further Education and Training (FET) colleges in South Africa have sign language interpreters. Given these figures, the educational prospects for the majority of signing children are not good.

The third alternative, Total Communication, is one which the researcher is reluctant to recommend in a South African context. As discussed in Chapter 2, it has many weaknesses (Johnson et al. 1989, 5) and can result in sign language's playing a smaller, unequal role (Lane 1993, 134). The solution proposed by Baker and Knight (1998, 79-80, based on Newell et al. (1990, 409), that teachers should develop a solid grounding in the use of natural sign language, is clearly a major obstacle in the light of the current availability of teachers who are fluent in sign language.

There is no easy answer to the language dilemma. While the researcher leans towards natural auralism, if this is not a viable option because of the cost of a cochlear implant or if a parent/guardian opposes the oral/aural route, the child needs to acquire sign language as soon as possible to avoid language delays (Hayes and Downs 2000, 62). While a programme like HI HOPES is able to provide intervention, there will still be many children who do not receive assistance, not least because of the lack of a countrywide infant screening programme and intervention. Thus, it is imperative for the government to play a more active role in reducing the impact of deafness by introducing newborn hearing screening and extensive intervention.

The South African government does acknowledge the vital importance of what happens in the initial stages of a child's life: The *Education White Paper 5 on Early Childhood Education* (2001, 8) states that "the influences of the first three years on the rest of a child's life are . . . well documented." It is also noted in the Education White Paper 5 (2001, 7) that it is in this time frame that children "develop their abilities to think and speak, learn and reason and lay the foundation for their values and social behaviour as adults." However, Noorbhai (2002, 4) points out that, while policies emphasise how vital the early years are, assistance does not always happen in practice. In fact, according to Noorbhai (2002, 4), health services for deaf children up to the age of three are "severely neglected."

5.5 THE ROLE OF PARENTS IN DEVELOPING A CHILD'S EMERGENT LITERACY

While early identification and early language intervention, such as that in the programme of Storbeck and Calvert-Evers (2008, 314-321) is essential for deaf children in the first few years of life, continued language intervention is necessary to develop children's emergent literacy. For instance, according to Storbeck and Calvert-Evers (2008, 320) there is a need for "systematic integration" between early intervention, in their case the HI HOPES programme, which assists children up to three years and "transition to preschool or to another educational setting." The medical intervention model of Swanepoel and Louw et al. (2007) and the home-based holistic model of Storbeck and Calvert-Evers (2008) both emphasise the importance of the family in the life of a deaf child, and they could play a pivotal role in this transition.

A stumbling block is that many deaf children do not have enough support from their parents. This problem is identified by Van Dijk (2003, 22) as being both a South African challenge, as well as a worldwide issue. In South Africa, because of HIV/AIDS, the child might not have parents, so the suggestions in this section would apply equally to guardians. The vital role of a parent is a well-known phenomenon. For example, Meadow, writing in 1969, refers to the crucial input of the family for the deaf child. Meadow (1969, 438) indicates that important interrelated issues are "those of parental expectations for scholastic and communicative achievement, *relative to the child's ability to fulfil parental goals,* family acceptance and valuation placed upon the actual skills which the child possesses, and the child's definition of his deprivation in relation to siblings and peers." More recently, Padden (1990, 5-6) notes that parents who have good communication with their deaf children assist them in achieving at school.

There is a range of ways in which parents can engage with young children to foster their emergent literacy. For instance, Weigel et al. (2006, 358) comment on the benefit of a supportive home environment. This engagement will need to take place in slightly different ways depending on whether the child is sign bilingual or using spoken language. Because reading and writing are interconnected (Whitehurst and Lonigan 1998, 849), both are discussed.

While there is some doubt about the connection between sign language and written English (see Chapter 2), for sign bilingual children, it seems to be beneficial for parents to encourage their children's fingerspelling. Fingerspelling involves using the hands to form 26 shapes representing to the English alphabet (Swanwick and Watson 2005, 62). Erting et al. (2000, 51) indicate that there is a relationship between sign language, fingerspelling and written English and that fingerspelling can be used to help a young child with his or her English. This research by Erting et al. (2000, 41-54) suggests that sign bilingual deaf children develop sign language, fingerspelling and text at the same time from a young age (Swanwick and Watson 2005, 63). In an article containing case studies and a discussion of a home literacy programme at the Indiana School for the Deaf, Andrews and Zmijewski (1997, abstract) discuss activities that connect fingerspelling and sign language to the reading and writing of young children. Some of these activities are reading entire stories every day, using letters and words to label drawings, writing lists and notes to other people in the family and developing writing by experimenting with it. This would obviously require the parent to be able to read, write and understand English.

For speaking children, there is also much that parents can do to foster reading and writing. While the suggestions below assume that the parents are first-language English speakers, parents for whom English is a second language but who can speak, write and read English might also consider employing these suggestions or else asking someone fluent in English to do so: As Waltzman et al. (2003, 758) note, deafness need not be a barrier to learning two spoken languages. First, Swanwick and Watson (2005, 66) encourage parents to help children understand what books are, for instance, helping children to recognize the front of the book and to see that both the words and the illustrations provide information. In addition, Weigel et al. (2006, 371) state, based on their research, that "preschool children exhibited greater print knowledge skills and stronger interest in reading and books when their parents read aloud to children, provided picture books in the home for children's use, visited the library with their children, and engaged in reciting rhymes, telling stories, drawing pictures and playing games with children."

When children are ready, parents can also help them to start learning phonics, specifically initial letters and start developing a vocabulary of single words, beginning with well-known objects and names of prominent people in the child's environment (Swanwick and Watson 2005, 66). It is also important, say Swanwick and Watson (2005, 68), for children to enjoy reading as this will promote a positive attitude. Lewis (1998, 105) encourages the use of early reading that is not too complicated, in terms of language, vocabulary or experience, for the child. For this reason, home-made or rewritten books are popular (Lewis 1998, 105). An important aspect of early reading is comprehension rather than "word-for-word reading" (Lewis 1998, 106). While Lewis seems to be directing these guidelines more at teachers, they could also apply to parents.

Lewis (1998, 109-110) suggests ways to encourage children in their emergent writing: At first, the focus of writing is on self-expression and showing that writing is relevant for children and useful for a variety of different purposes. Therefore, parents should write when their children are around and share the writing experience with them, in forms such as writing postcards, writing birthday cards, playing games consisting of messages and clues. While parents write, they should also speak about their writing to help children understand the connection between the verbal and written word. Parents should comment encouragingly on children's emerging writing too.

5.6 THE ROLE OF THE TEACHER

Once a child is at school, the question remains as to how best to assist the child with developing his or her reading/writing. The question is a complex one, and different children will respond differently to a variety of approaches. For those deaf children who are of school-going age, but cannot read or write yet, the researcher would recommend focusing on many of the emergent literacy activities discussed in the previous section on parental involvement as well as encouraging the child's development of spoken/signed language because of its interdependency with reading and writing (Erting et al. 2000, 51; Whitehurst and Lonigan 1998, 849).

Promoting the child's confidence in writing, as well as developing his or her grasp of the purposes writing has and its forms/audiences, is important (Lewis 1998, 109). For

those who are able to write independently, it would be helpful to include as many different writing opportunities as possible, from writing plays to having pen pals or writing jokes, as all these “will support written expression” (Lewis 1998, 110). Furthermore, a multifaceted, interactive approach which takes into consideration the value of both top-down and bottom-up models might prove most effective, as discussed in Chapter 2. It is also valuable to see writing as both a process and a product, as discussed below.

5.7 WRITING AS A PRODUCT AND A PROCESS

The traditional concept of writing is that it is a product. Murray (1972/2003, 3) states that in the 1970s, most teachers taught writing as a product. Even today, this view continues. For instance, according to Archer (2005, 76), many students attending university in South Africa still think writing is a product, “something to write in one sitting and to hand in for evaluation.” Emig (1977/2003, 8) too refers to the concept of writing as a product and suggests that this is not particularly useful.

Another way to view writing is as a *process* which results in a product. Writing is a process because it is an ongoing venture involving different steps. Murray (1972/2003, 4) identifies three:

1. *Prewriting*, which is the most time consuming, involves everything that happens before the actual writing, such as research, note-making and outlining. Prewriting also involves thought about the subject, the form of the work and the audience. For very weak children particularly, the teacher would need to spend a great deal of time on this step.
2. *Writing* is the actual writing of the learner’s initial draft. Here too, some deaf children would need a great deal of guidance. Initially, some writing pieces might not be more than a few teacher-assisted simple sentences.
3. *Rewriting* means going back to the subject, form and audience and reworking the draft, including editing.

It is clear, from these three steps, that this writing process involves both top-down concerns, such as planning the type of writing and audience as well as bottom-up concerns, for instance looking for spelling mistakes when editing.

5.7.1 Drafting approach

In order to treat writing as a process while using an interactive method that covers both top-down and bottom-up aspects of writing, a drafting approach is suggested.
The reason for focusing on the draft of children's essays while they are still in the process of writing is that this is when feedback is likely to have the most impact. According to Paxton (1995, 189), research "has shown that advice about writing in progress is more valuable than if it is given before or after writing." Furthermore, responses to drafts (rather than final products) may help learners to see writing as an ongoing process. An important element of this is dialogue. According to Quinn (1999, 6), who discusses the use of a "drafting-responding process" when teaching students, such an approach means that the person responding to the writing "enters into a dialogue, has a conversation, in writing, with the writer of the essay" (Quinn 1999, 6).

The dialogue needn't be a written one. As the children's level of writing is likely to be low, a verbal/signed dialogue will probably be more effective. In addition, the dialogue could also be an internal one which the teacher encourages the child to use to think about and question his or her writing. For instance, according to Lewis (1998, 110) in her discussion of the development of writing for oral/aural children, in natural auralism, "children are encouraged to 'read back' their own writing, to evaluate and self-correct. Wray and Medwell (1991, 120), in a section on writing revision for children, refer to common questions that writers ask:

- Does it say what I want to say?
- Is it in the right order?
- Is the form right?

Teachers could ask/sign children such questions too if the children are not able to on their own initiative. It is probable, for very weak children, that this will be essential. Wray and Medwell (1991, 121) refer to the key role of the teacher when children are

working with drafts. For instance, revision may require small changes, such as insertions, or rewriting and shifting sections of writing: As some of these strategies will present more of a challenge than others, “it is likely that children will need a great deal of support from their teachers before they are able to use them independently.”

5.8 SUMMARY

This chapter has discussed different recommendations to improve the writing of deaf children. First, early detection and intervention are essential, regardless of what language the child is going to learn. In addition, government assistance is necessary to make infant hearing screening and intervention a reality. Furthermore, parents/guardians have a vital role to play in fostering a child’s emergent literacy. Teachers too need to encourage the emergent literacy of children by teaching writing as a process using interactive approaches and drafting.

CHAPTER 6 QUALITATIVE RESEARCH: INTERVIEWS

6.1 INTRODUCTION

Different views exist on the relationship between data collection and data interpretation. There are two different approaches to the relationship between them: the common-sense hypothetico-inductivist model and the hypothetico-deductivist model (Wengraf 2004, 2).

First, the hypothetico-inductivist model is the "'grounded theory' tradition" (Wengraf 2004, 2), developed by Glaser and Strauss (1967), in which the researchers gather "all the relevant facts" (Wengraf 2004, 2). From these relevant facts, researchers can derive theory. Thus, as Glaser and Strauss (1967, 1) note, grounded theory is "the discovery of theory from data."

In contrast to this model is the hypothetico-deductivist model. The hypothetico-deductivist model opposes the importance of discovery emphasized by the hypothetico-inductivist model and denies the neutrality of facts (Ferrucci n.d., 35-36). Those supporting this model maintain that "there is no [such] thing as 'all the relevant facts'" (Wengraf 2004, 2). Rather, such researchers reject all facts except those relating to a specific hypothesis, which they develop from prior theory on an issue (Wengraf 2004, 2). Thus, as Grimes (1990, 514) notes, "According to the hypothetico-deductive (H-D) method of theory testing, a hypothesis is confirmed on the basis of its observational consequences."

This section of the research is more hypothetico-deductive than hypothetico-inductivist as the researcher developed various theories, based on her reading and quantitative research, prior to the interviews. However, she also discovered new information, such as the extent to which the government needs to be involved in helping deaf children. Thus, there is an element of inductive theory in the qualitative research too.

To understand some of the theory behind qualitative interviewing, the following chapter provides an overview of the theory behind qualitative interviews in a discussion of

interview interaction. Thereafter follows an overview of validity and then a discussion on ethical issues related to power relations in interviews and the sampling method chosen, which leads into a brief description of the interviewees and their relationship with the researcher. Following this is a discussion of the interview structure used in this research.

6.2 INTERVIEW INTERACTION

The interactions that take place in an interview are complex and include many factors. To explain some of these factors, the section below discusses the research of Peirce in the 19th and 20th centuries, followed by the more recent work of Briggs. Thereafter follows a discussion of Wengraf's model of the interview situation.

6.2.1. Interview interaction: Peirce

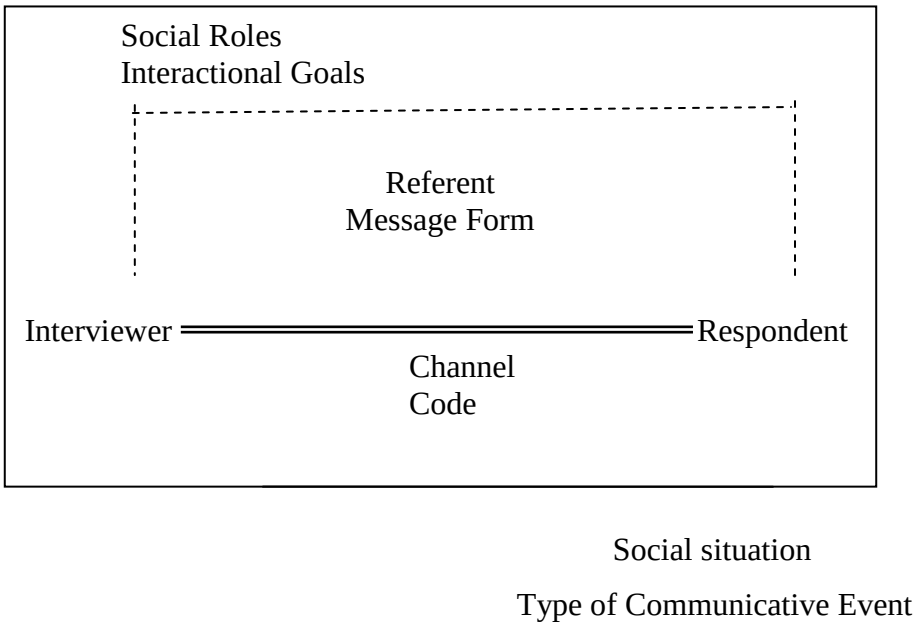
There is a range of different frameworks regarding interview interaction. The work of Peirce, in the 19th and early 20th centuries, on signs sheds relevant background light on how interview interaction takes place. Atkin explains Peirce's concepts in the *Stanford Encyclopedia of Philosophy* (2009, under "Basic Sign Structure"): Peirce argues that signs comprise three inter-connected elements: the sign, object and interpretant. The sign is the signifier, such as a written or spoken word (like the word "fire") or a picture of smoke representing a fire. The object is the "signified," for instance, the actual fire referred to by the written or spoken word or the smoke. The interpretant is "best thought of as the understanding that we have of the sign/object relation." A sign can only mean and refer to something when a person interprets it.

6.2.2 Interview interaction: Briggs

While this explanation of Pierce's concepts is very simplistic and does not discuss the complexities of Peirce's research, the background illuminates a model devised and explained by Briggs (1997, 40-41) by which to analyse an interview. This model is illustrated in Figure 9. First, the interviewer and respondent(s) are the people taking part in the interview. Second, the message form contains auditory and visual signals which "serve as sign vehicles in interviewer-respondent(s) communication" (Briggs 1997, 40).

The meaning of the word “referent” approximates that of Pierce’s “object.” Communication relies on at least one channel’s being open between the interviewer and respondent, whether it is physical (usually visual/acoustic) or psychological. Next, the researcher and interviewee need to share codes, both linguistic and nonverbal (such as gestures), to allow for the encoding of messages as well as their interpretation.

Figure 9: Briggs’s Components of the Interview Situation (Briggs 1997, 41)



The social roles which the interviewer and interviewee(s) take on are key to the success of the interview. Interactional goals refer to the reasons why each participant is involved in the interview. Then, categories of society which Briggs identifies as “Types of Communicative Events” could be as divergent as “making a few bucks or imparting an esoteric tradition” (Briggs 1997, 41). Furthermore, social situation is the context of the interview and includes elements such as time (in the day, week, and year) and the place where the interview happens.

6.2.3 Interview interaction: Wengraf

Wengraf (2004, 42-43) draws on the Briggs model, and the research of others, such as Foddy (1993), to adapt the Briggs model and devise the Briggs-Wengraf Model of Components of the Interview Situation, replicated in Figure 10. For instance, he replaces Briggs's "social situation" with the term "social setting" based on the reworking of Hymes by Saville-Troike (1982). For Wengraf, the thick black line in the middle stands for the communication and relationship which the *interviewer* and *informant* share. The *model of human inter/subjectivity* via which the interviewer interprets all communication and relationships will be the model that guides his or her understanding of the relationship and communication occurring in the interview. This process will consist of ongoing *emotion* and *evaluation* from both the interviewer and informant. The bottom right-hand corner of the model shows that this interview happens in a *social setting* and is a specific *type of communicative event*, consisting of expected norms regarding what should take place during and following the interview. As the "see-saw" (Wengraf 2004, 42) diagram containing the triangle indicates, the interview involves the developing *power-balance* between the interviewer and informant. These people's *social roles* and *histories* as well as their overall goals, which produce their specific *interactional goals and strategies*, which are mentioned at the top of the model, impact this power-balance, which can change during the interview. Next, the information beneath the thick black line refers to Foddy's (1993) model and those of semiologists regarding the codes which "determined *the encoding and the decoding of the messages as communicated through the channels*, mostly of sound but also involving non-verbal communication channels and codes as well" (Wengraf 2004, 42-43).

Wengraf (2004, 43-50) expands on his model to provide more in-depth insight into the elements comprising an interview. First, *social setting* refers to factors such as place and time of the interview, which require thought, and other issues such as social constraints and interruptions. Considering these is essential as the interviewer should try to avoid hindrances such as the possibility of others overhearing the interview.

Second, the *types of communicative event* experienced could vary greatly between interviewer and informant; the interviewer might be doing a professional semi-structured depth interview while the interviewee might have agreed to do the interview as a favour to someone. As each person has a different concept of what an interview entails, both participants might have to shift their concept of "the norms" of what an interview should comprise to fit in with the other person. Alternatively, either participant may deliberately choose to deviate from the norms. While each participant brings to the interview his or her norms, the norms of a specific interview are also influenced by the actual interaction which occurs during the interview.

Third, *social roles + (Past/Future) History* refers to the different roles (a researcher could be both an "interviewer" and a mother) and the "personal history" (Wengraf 2004, 44), whether good or bad, which the interviewer and respondent bring to the interview and the need to consider where these personal histories might be similar or different. The term "history" also includes potential future impacts of the interview, which the interviewee might hope for, expect, or be scared of, and which could influence the interview.

Fourth, Wengraf has expanded on Briggs' concept of interactional goals to include *strategies* as the interviewer and respondent develop strategies in order to achieve their goals for the interview. For instance, the interviewer may have developed strategies to retain control over the interaction while the respondent uses opposing strategies to ensure that he or she is able to express him- or herself freely.

Fifth, Wengraf discusses *power* and the *referent. Power* relations are always present in an interview situation. As discussed elsewhere, the notion that qualitative interviews are democratic is a fallacy. Then, the *referent,* the topic under discussion, may be unclear. For instance, in a discussion about the impact of legislation on racism, two participants may have different understandings of, or referents for, the term "racism."

Sixth, Wengraf discusses *emotionalities and evaluations*. Participants in an interview feel and express a gamut of emotions, ranging from those the other participant cannot perceive to those which are "over the top" (Wengraf 2004, 46). These feelings and exchanges provide the emotional context within which the interviewer evaluates what is

happening in the interview. In this evaluation, the interviewer weighs up what he or she is doing, what the informant is doing, and whether the interviewer is succeeding in his or her interactional goals and strategies.

Furthermore, the discussion of the *researcher's model of human subjectivity and intersubjectivity* sums up many of the previous points. The interviewer's interpretation of the interview interaction firstly relies on his or her model of inter/subjectivity. Secondly, the interviewer's interpretation rests on his or her developing model of the two subjectivities present during the interview.

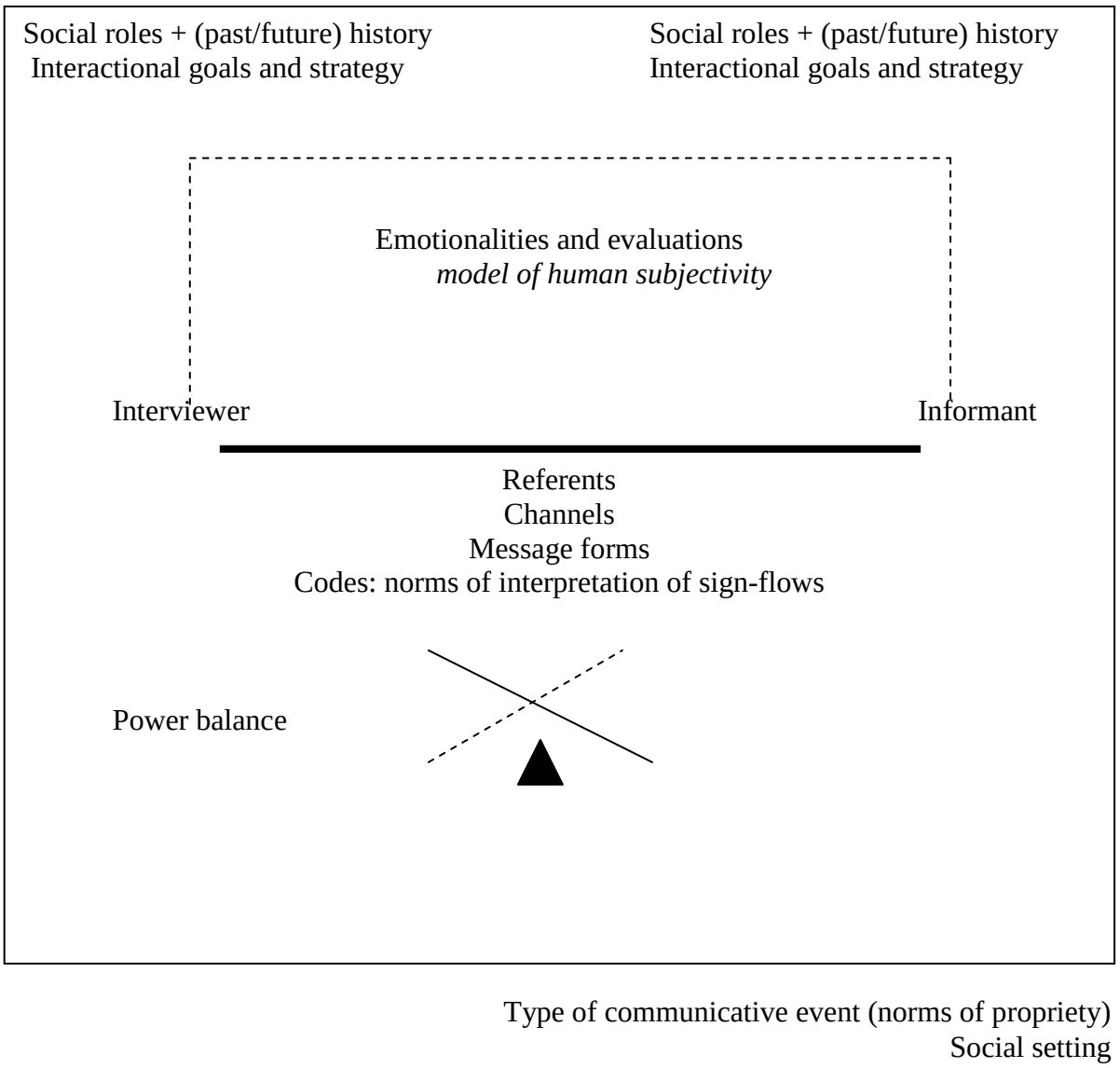
Next, the *channel* refers to how the message is conveyed, such as through auditory means, via speech. Speech is a complex channel as it includes *paralinguistics*, how words are said. For instance, something may be spoken ironically, creating the opposite meaning from that conveyed by the words. There are many other channels too. For instance, the eye seeing the body is a channel which identifies body language. Other examples are the smell of perfume and the interface occurring between the equipment, such as a tape-recorder, and the people involved in the interview.

In addition, *codes* are, on one level, the language used, such as English, or a foreign language interpreted by a translator. On a deeper level, even when the participants are speaking the same language, "there is an immense amount of variation in the 'encoding of subtle meanings' even if the same words are used" (Wengraf 2004, 48). Nonverbal language and sign forms also contain codes, such as clothing and body posture. These codes are often difficult to interpret and are easily misunderstood and continually changing.

Moreover, the *message form* involves the "sign systems" through which a person expresses what he or she means. For instance, message forms can be voice tone and words: saying "I dislike you" (words) sincerely (tone) and "I like you" (words) in an insincere way (tone) both express the same message.

Figure 10: Briggs-Wengraf Model of Components of the Interview Situation

(Wengraf 2004, 43)



6.3 VALIDITY

A core element of research results is their validity. Maxwell (1996, 87) defines validity as "the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account." It is also important that the results of a study are reliable. Validity and reliability in qualitative research are not always popular. For instance, movements away from these terms took place in the last two decades of the 20th century (Morse et al. 2002, 3). A concern of Morse et al. (2002, 8-9) is that such qualitative researchers may concern themselves overly with the outcomes of a study and evaluating the rigour of the research *after* it is complete instead of pursuing rigour *during* the research process.

Despite opposition, the necessity for validity is widely recognized. As Maxwell (1996, 87) states, "Validity is generally acknowledged to be a key *issue* in research design." Without clear indications of how they tackled validity (rather than *whether* they did so), authors may not be able to prove the value of their methodologies to positivist researchers (Appleton 1995, 993). Furthermore, inadequate validity lessens the credibility of a paper. The focus when testing validity in a qualitative study is to show why specific reasonable alternative explanations and interpretations are less valid than the ones posed in the research (Maxwell 1996, 89).

To increase validity, a researcher needs to be aware of kinds of validity, as well as threats to these types of validity, which are discussed below. To minimize these threats, there follows a discussion of different strategies to improve the validity of a study.

6.3.1 Kinds of validity and threats

There is a range of kinds of validity, which also contain threats. Maxwell (1996, 89-90) focuses on four kinds and how they can fall under threat: First, *description* can impact on validity. A researcher may easily omit information or record it inaccurately, for instance, when noting what he or she saw or heard. Recording, and transcribing in addition to having a word-for-word transcription, helps to avoid this. Without such measures, the risk of making an invalid description increases, which increases the likelihood of drawing invalid conclusions. In this research project, the researcher

recorded the face-to-face interviews in several ways. Details of these recordings and the transcription are included later in this chapter in the section “Generation and gathering of data” (Section 6.5.4, page 117).

Second, *interpretation* may cause invalidity. This generally happens when the researcher uses his or her own framework to interpret the words and actions of participants rather than reflecting the intended meanings and perspectives of those in the sample. Brinkmann and Kvale (2005, 161) touch on the moral importance of not placing personal interpretations on others. According to Brinkman and Kvale (2005, 161), “Being ethical means being open to other people, acting for the sake of their good, trying to see others as they are, rather than imposing one’s own ideas and biases on them.” In this dissertation, the researcher started with a clear bias towards oral language because of her support of the medical model of deafness. However, some of the interviewees’ acceptance of the possibility of nonmedical responses to deafness, such as the use of sign language, as well as the researcher’s second literature review, shifted the researcher’s interpretation of deafness rather than the researcher’s interpreting the interviewees to fit her framework.

Third, *theory* can also challenge validity if the researcher fails to consider conflicting data or different explanations regarding the issue under investigation. Therefore, discussion of such conflicts is necessary. For instance, in a study by Appleton (1995, 996), “The researcher paid particular attention to any exceptions to findings.” While there was little disagreement on many of the issues discussed in the interviews, there were discrepancies among the interviewees in attitudes towards sign language and spoken language. One interviewee strongly supported spoken language, another felt he was not qualified to comment on the issue as his field of expertise was disability in general and a third interviewee accepted the possibility that some children might use sign language rather than spoken language.

Fourth is *generalisations*. While in quantitative research being able to generalise the results to the whole population under investigation is essential, this is not the case with qualitative studies. However, Maxwell (1996, 97) differentiates between this commonly understood type of generalisation and generalisations “*within* the setting or group studied.” This second kind of generalisation is important for the validity of a qualitative

study. For instance, as Maxwell (1996, 97) explains, if someone is investigating patterns of interaction which occur in a classroom between a teacher and learners, excluding certain learners or interactions will cast doubt on the validity of the research. In this study, the aim was less to provide generalisations within the group than to highlight the opinions of experts, the generalisability of whose views was tested against the literature review on recommendations.

6.3.2 Further threats to validity

Further general problems relating to the researcher can undermine the validity of a study. One is researcher bias and reflexivity. According to Fade (2003, 141), who draws on a range of different sources as evidence, most researchers accept the necessity of exposing "their biases and personal perspectives and demonstrate that these have been taken into account during analysis." This is called reflexivity and is a crucial element of research as it is the researcher who interprets the words and actions of interviewees, and it is the researcher who uses information from participants to develop additional probing questions (Fade 2003, 141). Thus, researchers must discuss potential biases and how to cope with these (Maxwell 1996, 91): While Maxwell is referring to the inclusion of this information in the proposal, it is also important to discuss it in the methodology itself to increase validity.

In addition, researchers should clearly indicate their personal opinion regarding the subject under discussion and relevant information like their relationships with the interviewees. Tong et al. (2007, 351) recommend that writers "recognize and clarify for readers their identity, credentials, occupation, gender, experience and training." In relation to the current research, the researcher is a master's student whose occupation is that of teacher and writing centre reviewer. The researcher is female with approximately five years of teaching experience and two years of reviewing experience with a B.A. degree in languages (English and Latin) and a B.Phil. in Journalism. As the researcher's training took place via oral/aural education in mainstream institutions, she started with a clear bias in this direction. This is supported by the fact that the researcher teaches using oral/aural language although her work for the writing centre is only online, which has increased her awareness of alternative approaches to education. Another important characteristic of the researcher is her hearing loss, which occurred

postlingually, at the age of 16. The lateness of the deafness means that the researcher grew up in an aural/oral environment and culture, which also has served to bias her towards a medical approach to deafness. However, while this bias may well have influenced her studies, the findings of the research have also affected this stance and led her to question whether, in a South African context, the aural/oral route is always the best, at least in the immediate future.

A second challenge is reactivity. This refers to the impact which the researcher has on the participants under investigation or the setting (Maxwell 1996, 91). In a qualitative study, the aim is to try to "understand . . . and to use" (Maxwell 1996, 91) the influence of the researcher rather than to try to remove it. In an interview, reactivity plays a prominent role as the speech of the interviewee is always linked to the person asking the questions and to the interview circumstances (Maxwell 1996, 91). Thus, the researcher needs to realise how he or she is affecting the interviewee's speech and how this effect might impact the validity of inferences he or she develops (Maxwell 1996, 91). As far as possible, the researcher tried to ask open-ended, neutral questions. Admittedly though, on reflection, there were some questions which seemed to encourage a specific answer. For instance, in the interview question below, from the interview with Tony Webb, the phrase "how crucial" implies that writing is important:

- And there's just one last question I wanted to ask you about. Writing and reading, literacy. Particularly writing. *How crucial is that* – for children with disabilities to be able to [write]?

However, the interviewer will always have some influence on the interviewee. Moreover, it is unlikely that the researcher had an undue effect on the interviewees as they were chosen as experts in their fields and therefore were likely to have confidence in their opinions and responses.

6.3.3 Strategies to increase validity

To avoid invalid interpretations to the best of his or her ability, there is a range of strategies which a researcher can adopt. While different authors will have different lists and none are conclusive, a popular strategy is that of triangulation. Other approaches

are finding discrepant data and negative cases, member checks and rich data (Maxwell 1996, 92-96). These are discussed in more detail below.

6.3.3.1 Triangulation

An important aspect of research is triangulation. While triangulation implies the use of three kinds of approach (Fade 2003, 141), in actual fact, triangulation just means using a variety of methods when gathering and analysing data (Patton 1999, 1192). Thus, using two or more different approaches results in triangulation (Fade 2003, 141). This increases the validity of a research project. As explained by Patton (1999, 1192), "Because each method reveals different aspects of empirical reality, multiple methods of data collection and analysis provide more grist for the research mill." Furthermore, triangulation limits the likelihood that conclusions will mirror the bias or limitations peculiar to a certain method (Maxwell 1996, 75).

One form of triangulation is the combination of qualitative and quantitative research. While the data collection and analysis of deaf children's writing in Chapter 4 was quantitative in nature, the following section deals with qualitative data collection and interpretation related to recommendations to improve children's writing. The qualitative data consists of two forms of data: a second literature review providing recommendations and interviews.

6.3.3.2 Finding discrepant data and negative cases

Another way to help a researcher to achieve validity is to look for evidence that does not tie in with a researcher's conclusion regarding a phenomenon. This is not always easy as researchers are prone to finding confirmatory rather than contradictory data (Creswell and Miller 2000, 127). Maxwell (1996, 93) notes, however, that while this can expose weaknesses in an interpretation, the presence of discrepant data/negative cases does not necessarily mean that an interpretation is wrong. For instance, physics "is full of examples of supposedly disconfirming experimental evidence that was later found to be flawed" (Maxwell 1996, 93). Therefore, careful consideration of both supporting and opposing evidence is important when determining whether conclusions are valid (Maxwell 1996, 93). For instance, the interviews and the literature review

produced the conclusion that universal newborn hearing screening (UNHS) is essential to assist the writing of deaf children. However, the researcher only reached this conclusion after considering the opinion of those who questioned this.

6.3.3.3 Member checks

Member checks are also a common way of increasing validity. According to Turner and Coen (2008, 184), member checking, originally developed by Lincoln and Guba (1985), and also called respondent validation, involves giving back research to participants for them to check the "integrity" (Turner and Coen 2008, 184) of the findings. This gives interviewees the chance to indicate whether they believe data is accurate and the findings reflect their personal experiences (Fade 2003, 142). Many firmly support such checks. For instance, Cutcliffe and McKenna (1999, 378) refer to the numerous authors who support member checks and comment that "few would dispute the value of this endeavour."

However, member checks can be problematic. For instance, there is always the possibility that those interviewed may decide they do not like what they said or what the researcher wrote. This may lead them to want to censor sections of essential information which were previously given "on the record" or to withdraw their consent unless the researcher complies with this request. While studying at a different institution, the researcher once conducted an interview with someone who subsequently requested that the whole interview be redone so that the interviewee could make changes to the responses to questions. While every effort should be made to accommodate interviewees, the interviewer has a greater chance of obtaining authentic material from the initial interview. To pre-empt such possible occurrences, the researcher opted to avoid member checks and instead used the help of someone with little knowledge of the research project. This person agreed to listen to the tape recordings of the interviews and to check them against the researcher's transcript for accuracy. In addition, the researcher has used many direct quotations in her analysis of the data to reduce the chances of misinterpretation. Copies of the transcripts are also available as appendices.

6.3.3.4 Rich data

In addition, rich data can increase the likelihood of validity. Creswell and Miller (2000, 128) explain that rich data involves a detailed description of the setting, the themes of the research, and those participating in the study. The value of rich data is that it "creates verisimilitude" (Creswell and Miller 2000, 129), making the reader feel that he or she is actually experiencing the happenings which the researcher is describing (Creswell and Miller 2000, 129).

Furthermore, rich data allows the reader to decide whether the findings of a study might be applicable to other settings/contexts (Creswell and Miller 2000, 129). In terms of an interview, rich data "generally require verbatim transcripts of the interviews, rather than simply notes on what you noticed or felt was significant" (Maxwell 1996, 95).

The transcript of the recording is not completely verbatim as the researcher has omitted interjections, such as "um" and some sentence fragments. The reason for these omissions is that the researcher was aiming to obtain factual information from the interviewees, rather than analysing hidden/subconscious meanings in the interviewees' responses, and the omitted words/phrases detract from the clarity of the transcripts. Otherwise, as far as possible, the transcripts are verbatim. Occasionally, a few words are inaudible, and the researcher has then indicated this in the transcript.

6.4 INTERVIEWS

Of the range of different kinds of qualitative research, the researcher chose to use interviews. Interviewing has a variety of different advantages. First, according to Appleton (1995, 994) "high response rates are common." In addition, interviews are generally hierarchical with the interviewer exercising some control. While such a power imbalance could be negative and measures are necessary to avoid harmful domination, being able to control certain aspects of the process increases the chances of the researcher's accessing the information needed, first-hand. For instance, Appleton (1995, 994) notes that interviewing allows the researcher to explain "unclear questions," thus

further increasing the likelihood of eliciting the required data, if the interviewer is experienced.

In order for an interview to be as successful as possible, the interviewer needs to be aware of ethical issues related to interviewing. The researcher should also have knowledge of different kinds of sampling to make the correct choices when choosing participants. Following a discussion of these two points is a description of the three interviewees who were selected from the sampling process.

6.4.1 Ethics of interviews

Qualitative research has become popular, and some may view it as more "ethical" than quantitative studies. For instance, it often comes with "the implicit idea that qualitative research is ethically good in itself, or at least ethically superior to the uncaring quantitative approaches" (Brinkmann and Kvale 2005, 157). This may apply particularly to interviews, sometimes named a dialogue (Kvale 2005, 5). The term *dialogue* suggests a "conversation" between two people who are equal in power and who together are seeking "understanding and knowledge" (Kvale 2005, 5).

However, entering into an interview with this concept is to be ignorant of the power relations at play in an interview. In such an inaccurately named "dialogue," the notion of equality between interviewer and interviewee is faulty. There is a range of different types of power play which take place, revealing that the balance of power lies with the interviewer. Kvale (2005, 7) expresses this by indicating the control the interviewer possesses. For instance, the interviewer decides where and when the interview will happen, chooses the subject of the interview, asks the questions and ends the discussion (Kvale 2005, 7).

Conducting such an interview is not unethical. However, conducting an interview of this nature in the guise of a "dialogue" between equal partners would be. In terms of the current researcher, therefore, it is necessary to state upfront that rather than posing as a dialogue, the interviews involved unavoidable power relations. Because too much control in the hands of the interviewer is inconsiderate, the researcher attempted to avoid control which borders on selfishness. For instance, the interviewer asked the

interviewees what the most convenient time, date and, where relevant, place were for the interview.

On the other hand, elimination of all hierarchical elements of the interview is not desirable. For instance, in order to obtain the required information, the interviewer needed to choose the subject of the interview. In addition, while the interviewees were free to ask questions, the interviewer posed the main questions of the interview to elicit the necessary information. Furthermore, final interpretation rested in the hands of the interviewer as, after taking into account the interviewees' responses to her interpretations, she needed to take responsibility for determining to what extent she should accept these reactions. As the interviewees were experts and the information factual, there was relatively little room for misinterpretation.

6.4.2 Sampling

In order to determine who to interview, sampling is necessary. In qualitative research, sampling is typically part of a category known as *purposeful* sampling (Patton 2002, 46), also known as *purposive* sampling. According to Singh (2007, 108), purposeful/purposive sampling means that the sampling "is done with a purpose." This purpose is to "permit inquiry into and understanding of a phenomenon *in depth*" (Patton 2002, 46).

The type of purposive sampling chosen for this research was expert sampling. According to Changing Minds.org (n.d., under "Use"), this kind of sampling is used when a researcher needs to draw on the viewpoints of people who are reasonably highly skilled or knowledgeable about a particular topic.

There are two main motives for selecting expert sampling, as noted by Trochim (2006, under "Expert Sampling"): First, it is the most effective way to obtain the opinions of people with expertise in a certain area. In this research project, the researcher defined an expert as someone with practical experience in his field whose expertise had been acknowledged by academic or career achievements. In the case of the interviewees who took part in this study, all three were experts whose skills have been acknowledged by their career appointments. Their expertise is discussed in the following section. Second,

expert sampling is useful to validate another sampling approach. While in this study there was no other sampling approach, the interviews were used to test the validity of the second literature review on recommendations.

6.4.3 The interviewees and their relationships to the researcher

There were three interviewees, each with a different relationship to the researcher. First, Tony Webb is a disability consultant who runs Disability Options. He worked with the Nelson Mandela Metropolitan University and started a disability unit there. He was able to provide an overview of disability in South Africa. While Mr. Webb was not known to the researcher, he is acquainted with the researcher's husband, who assisted Mr. Webb in previous research. While this first interview was initially intended purely as a pilot interview, as it contained relevant information it was integrated into the research.

Second, John Bell is head of department of the Partially Hearing Unit at Greenwood Primary, and he has practical experience of working each day with deaf children in an educational setting. The researcher contacted Mr. Bell several years ago in connection with her master's research, following which she volunteered for a term in his classroom.

Third, Professor De Wet Swanepoel is associate professor at the Department of Communication Pathology, University of Pretoria, and adjunct professor at the School of Behavioral and Brain Sciences, Callier Center for Communication Disorders, University of Texas, Dallas, USA. He has done a great deal of research on UNHS in South Africa and is currently carrying out UNHS at pilot sites in South Africa. The researcher has never met Professor Swanepoel and contacted him via email several months prior to conducting the interview.

6.5 THE INTERVIEW STRUCTURE

A discussion of the process leading to the interviews helps to reveal the validity of the research. According to Chenail (1995, under "Openness"), "after having been presented [with] both the process and the results of the analysis, readers are in a much better position to see if they can see what you were seeing or at least accept that your take on

the data was a valid one." As Chenail (1995, under "Openness") states, a successful qualitative study requires details such as how the researcher (1) constructed the research, (2) developed research questions, (3) chose the location for the study and (4) generated and gathered the data. The following paragraphs discuss these issues.

6.5.1 Research construction

First, the researcher constructed the research as a semi-structured depth interview. A depth interview has four important characteristics, as noted by Wengraf (2004, 3-6):

- It is a research interview, so its aim is to deepen the reader's and researcher's concept of reality as well as to test various theories and models and to create them. The interview does not bring about harmful change to the interviewee and beyond the limits of consideration (see "Ethics of Interviews" section), does not attempt to "empower" the interviewee: The interview is a hierarchical process.

- It is a conversation. An interview, like any other personal interaction, involves two people with specific worldviews. Thus both researcher and interviewee bring into the interview different ways of seeing the world, determined by issues such as their social status, fears, biases, and feelings.

- It requires much preparation so that the interview contains carefully pre-planned questions which allow room for other unplanned questions which lead out of the interviewee's responses.

- It is an in-depth look at the details and complex realities under the surface.

The semi-structured format was chosen as it allowed a certain amount of control while still allowing room for the interviewer to ask questions emerging from the information shared by the interviewee. The interviews followed a typical semi-structured format. According to DiCicco and Crabtree (2006, 314), semi-structured interviews are usually organized ahead of time and planned for a specific time and place, as occurred in this study. In addition, semi-structured interviews usually consist of "a set of predetermined open-ended questions, with other questions emerging from the dialogue between

interviewer and interviewee/s" (DiCicco and Crabtree 2006, 314). In this dissertation, the interviewer began with predetermined open-ended questions and asked other questions arising during the interview itself.

6.5.2 Research questions

The overall question of this dissertation is the following:

- Are there significant differences between the written English of deaf children and the written English of hearing children in the Nelson Mandela Metropole?

As previous chapters indicated, the written English of deaf children in the Nelson Mandela Metropole is significantly weaker than the written English of hearing children. Based on these findings, the main question, what Wengraf (2004, 225) calls the "Central Research Question," of the qualitative section, emerges:

- What recommendations can be made, based on the findings of the research project, for improving the written English of deaf children?

Based on this question, the researcher did a second literature review. Following the literature review, the researcher hypothesized that there were several main areas needing attention in order to improve the written English of deaf children:

1. The introduction of UNHS for deaf children throughout South Africa
2. The development of effective, early intervention for deaf children in South Africa to ensure the development of language, either spoken or sign, as soon as possible
3. The importance of parental support and the necessity of drafting in schools to improve the written ability of deaf children (while the rest of the chapter refers only to parents, this term is meant to include whoever is *in loco parentis*).

Deriving from these hypotheses are several questions, which Wengraf (2004, 62) calls "theory-questions," which are "formulated in the theory-language of the research community." The following theory questions arose:

1. What is the role of UNHS in assisting deaf children to develop written language?
2. What is the role of early intervention in assisting deaf children to develop written language?
3. What is the role of the government regarding screening and implementation and the prospects of deaf learners in education and, later, the work force?
4. For a parent whose child is diagnosed with severe-profound hearing loss following screening, what would be reasons for recommending either medical intervention/teaching aural language or the use of sign language?
5. How can children be assisted with their education and specifically writing?

6.5.3 Location of study

The location for the interviews was based on practicalities and what was most convenient for the interviewee. One interviewee, Professor De Wet Swanepoel, was based in Pretoria, so the interview had to happen long distance via Skype. For this interview, the location of the researcher was at home, which minimized disturbances, while the exact location of the interviewee was unknown. The interview took place at a time and on a date suggested by Professor Swanepoel. Similarly, the researcher asked the other two interviewees, Mr. John Bell and Mr. Tony Webb, which times and places would suit them best. Mr. Bell chose to have the interview during a free period at school in a quiet area outside his classroom. This made the tape recording of the interview very clear. Mr. Webb chose to have his interview at home, which was also quiet and prevented interruptions.

6.5.4 Generation and gathering of data

The generation and gathering of data happened over several months as it involved collecting a list of possible interviewees, determining the kind of interview and preparing for the interview. Therefore, the researcher conducted the interview, transcribed each interview, and had the interviews checked.

First, the researcher discovered, several months before the interviews, a list of possible interviewees who would be prepared to talk with her and took their details or ensured she had the details of their workplace. From the list of those giving verbal consent, she

then contacted the people most fitting the requirements of the study. One did not respond to the message left for him via his principal, and another potential interviewee, who was living in another province, agreed to the interview but never returned the formal consent form. The remaining two, Mr. Bell and Professor Swanepoel, both returned consent forms and agreed to take part in the interview. In addition, the researcher then contacted Mr. Webb, who also agreed to take part in the research and signed a written consent form (See Appendix A, B and C for consent forms).

In addition to confirming the final participants in the interviews, the researcher also needed to select the most appropriate form of interview. Two of the interviews were face-to-face interviews, those with Mr. Webb and Mr. Bell, as they were both in Port Elizabeth. The third interview, with Professor Swanepoel in Pretoria, happened via Skype chat. Skype chat was chosen rather than telephone or email: Using the telephone was problematic because the researcher sometimes has difficulties because of her own hearing loss, and email questions lack the immediacy of interaction present in real-time questioning. Skype chat had the additional benefit of making the lengthy process of transcription unnecessary: once the interview was complete, both the researcher and the interviewee had their own copies of a complete transcript of the interview.

Third, in preparation for the interviews, the researcher developed several interview-questions, which "are formulated in the language of the interviewee" (Wengraf 2004, 62) which referred back to the theory-questions. This is essential as asking questions in terms unfamiliar to the interviewee can be confusing. This became evident in the interviews: Whereas usually the interviewees understood the questions, it did happen that the researcher occasionally had to rephrase a question to make it clearer.

The next step was the actual interviews themselves. The pilot interview with Mr. Webb, which the researcher also integrated into the findings, provided useful experience on interviewing as well as helpful information on disability. First, the experience was valuable as the researcher realized that during the interview it was not always practical to try to write very detailed notes and give Mr. Webb her full attention simultaneously. Fortunately, the researcher had someone with her also taking notes, as well as a tape recorder. She found the presence of a note-taker invaluable as he also turned over the tape when it reached the end of one side, which she would have forgotten to do as she

was focusing on the interview. She subsequently used a note-taker and tape recorder in the other face-to-face interview. In addition, the researcher also experienced the value of conducting the interview at a location most convenient for the interviewee. Because the interview took place at Mr. Webb's home, he had on hand various booklets and information on disability to show her. It was also good experience as the researcher was nervous beforehand, not having conducted an interview for several years. Mr. Webb's kindness and helpfulness made the interview a positive experience, reducing anxiety.

In the interviews, it was also important to ensure (1) validity and reliability and (2) to reflect back the interviewees' answers. To increase validity and reliability, prior to the face-to-face interviews, the researcher requested permission to tape record the interviews and to bring an assistant who would take notes. Furthermore, the researcher took some notes as well: As Patton (2002, 383) says, using a tape recorder "does not eliminate the need for taking notes." Taking notes has a range of purposes, a crucial one being that notes provide a backup should the tape malfunction. The researcher also took extra batteries for the tape recorder to avoid preventable technical hitches. Fortunately, both recordings were successful.

In addition to note taking to make the data as valid/reliable as possible, the researcher also sometimes reflected back on what an interviewee said. According to Schamberger (1997, under "The Interview"), this "should reflect the meaning" of what the interviewee says. For instance, the researcher asked De Wet Swanepoel how people could increase awareness of the need for UNHS. After his response, she used a follow up question to ensure she had understood: "So in essence, the key to greater awareness will require government support in the form of enacting laws and implementing them?" This both shows that the researcher was hearing the interviewee, rather than imposing her own interpretation on his words, and aimed to confirm that she was understanding correctly.

The next step was transcription. Transcription is a highly complex process. As Wengraf (2004, 222) notes, "Any representation of a complex event such as an interview interaction will be less complex and more selective/simplified than the event itself." Transcription may not only fail to capture all the nuances of the original interview, such as the mood of the interviewer and interviewee, but the process of writing down

someone's words can also result in a change to the meaning of the words. As DiCicco and Crabtree (2006, 318) indicate, people tend to use run-on sentences when talking, so transcribers need to determine where to insert punctuation, which can alter the meaning of a sentence. The researcher used a tape recorder to record the interview. She then transcribed the interview herself. While asking a transcriber to do this is an option, doing the transcription personally was not only cost effective but increased the validity of the research. According to Patton (2002, 441), doing "all or some of your own interview transcriptions (instead of having them done by a transcriber), for example, provides an opportunity to get immersed in the data, an experience that usually generates emergent insights."

In addition, to increase the validity of the transcripts, the researcher repeatedly rewound and replayed sections of the tape. To ensure validity further and because of the researcher's hearing loss, which made some words difficult to hear, she then requested someone who was not familiar with the research to listen to the recorded interviews while checking a printout of the transcription in order to minimize errors. In the transcript, interjections such as "um" were not recorded, and the researcher did not take note of laugher or other mood indicators. The reason for this decision was that the motive for the interview was to obtain factual information rather than reflections on the interviewees' personal experiences.

6.6 SUMMARY

This chapter focused on the theory behind qualitative interviewing by giving an overview of interview interaction as seen by Peirce, Briggs and Wengraf. Following this was a discussion of validity and ethical issues in interviews as well as the sampling method chosen. Thereafter came a short description of the interviewees and their relationship with the researcher. The chapter ended with a discussion of the interview structure used in this research.

CHAPTER 7 ANALYSIS OF INTERVIEWS

7.1 INTRODUCTION

In order to analyse the interviews, the researcher first needed to determine how to do this. There are a variety of different analysis options. For instance, Maxwell (1996, 78) refers to three main groups: “memos, categorizing strategies (such as coding and thematic analysis), and contextualizing strategies.” The researcher used the most common (Maxwell 1996, 78) of these strategies, coding. The coding was mostly deductive, though some inductive analyis - the discovery of new categories (Patton 2002, 453) - also took place.

As discussed in the previous chapter, the researcher began with five main theory questions, which formed the five categories. Below each of the questions, the researcher has also included either (1) her hypothesis and whether this was confirmed (deductive analysis) or (2) her lack of hypothesis and what answers emerged (inductive analysis):

1. What is the role of universal newborn hearing screening (UNHS) in assisting deaf children to develop written language?

   Hypothesis: UNHS is essential for children to develop written language. This was largely confirmed.

2. What is the role of early intervention in assisting deaf children to develop written language?

   Hypothesis: Early intervention is essential for children to develop written language. This was confirmed, although ongoing intervention is a challenge.

3. What is the role of the government regarding screening and implementation and the prospects of deaf learners in education and, later, the work force?

Hypothesis: The government needs to do more to support deaf children in language development and education, as well as the work force. This was confirmed.

4. For a parent whose child is diagnosed with severe-profound hearing loss following screening, what would be reasons for recommending either medical intervention/teaching aural language or the use of sign language?

   Hypothesis: While the researcher started her research with a strong bias towards aural/oral language, her exposure to the realities of health in South Africa, such as the lack of medical assistance, left her with no clear hypothesis. While her own experience of deafness and education still drew her towards oral language, the impossibility of some children's having access to the required technology to enable speech made her question her position. Based on the interviews, there was no clear agreement on this issue.

5. How can children be assisted with their education and specifically writing?

   Hypothesis: The researcher's belief in the invaluable role of parents was affirmed, as was her hypothesis that a range of approaches, particularly drafting, was an important tool to assist deaf children in their writing.

These provided the main categories for the data analysis: UNHS, early intervention, the role of the government, speech/sign language, and assisting children with their writing.

7.1.1 What is the role of UNHS in assisting deaf children to develop written language?

According to the interviews, UNHS plays a vital role in assisting deaf children to develop their writing. Professor Swanepoel affirms that UNHS is essential for children to have the best possible chance to develop a solid base in their first language, noting that this "has been clearly demonstrated by large-scale research studies now in the USA and UK. No other method can result in similar outcomes that can maximize the child's potential." Mr. Bell supports Professor Swanepoel, saying that UNHS "would have

exceptional benefit if it was followed up properly once the hearing loss had been diagnosed." Mr. Webb also agrees that the earlier that children are identified, the better.

Furthermore, without early identification, children, most of whom are in the public health sector, born with permanent bilateral hearing loss or those who develop it in the first few weeks of life are unlikely to develop age-appropriate fluency in a language (either signed or spoken). As explained by Professor Swanepoel, if detection does not happen soon, research indicates that the chance of developing "age-appropriate fluency in language is slim."

There are also additional factors which play a role, Professor Swanepoel notes:

> Of course there is a large range and certain children with additional support may do very well but on average language abilities will be severely delayed. Another factor to take into consideration here is the degree of hearing loss and secondary developmental disabilities that may co-occur. The worse the hearing loss the more severe the language delay.

Thus, while other factors, such as the extent of the deafness, affect the child's development of language, this does not alter the vital role of detecting the child's hearing loss as soon as possible. Mr. Bell also discusses the impact of hearing loss, focusing on the development of a child's mother tongue if not detected early:

> I think for every year of language lost, I read, you need an hour of intense language therapy every day and that's beyond school time, so if you have a hearing loss where your language delay is three years, you need three hours of intense language therapy every day, and that includes parents and children and their friends and wherever they can be bathed in the language that they're supposed to be communicating in and then the chances of them communicating in a way that we are able to, will be possible, mostly.

Professor Swanepoel explains the link between hearing and language by referring to the "critical language development period" within which language occurs most easily - in the earliest years of a child's life. Detecting a child's hearing loss as early as possible

therefore increases the likelihood of intervention and improved language development (whether sign or spoken language):

> The benefit [of early detection] is language development that can be within the developmental ranges for children without hearing loss. Language is the key here, whatever mode is chosen, the children benefit from implementing a language approach early and providing the necessary accompanying intervention to promote . . . this development. Language is the basis for later literacy skills, so the better the language development early on, whatever the mode of communication, the better the prospects for good literacy.

In addition to the impact of screening on language development, screening accompanied by intervention could also play a social role, suggests Mr. Bell:

> It would raise the awareness levels of people and society not only to hearing loss but to the possibilities of other barriers to living and learning, so I would hope that there would be a whole lot of screening tests, of which hearing [is] obviously important, important, yes.

In developing countries like South Africa, unlike developed countries such as the United States, UNHS is unlikely to be effective if only done via hospitals. In some districts, hospital screening is possible as “certain parts of SA have an almost 100% birth rate in hospitals,” notes Swanepoel. On the other hand, Professor Swanepoel explains, a large number of babies in South Africa are not born in hospitals and those who are often are discharged in the first 12 hours after being born while the best time to screen babies is later than 12 hours following birth. A solution which Professor Swanepoel has found helpful is to do the screening in immunization clinics:

> We have done some initial studies on this approach and recent reports from Nigeria on the same topic have also confirmed the feasibility of this approach [screening in immunization clinics]. We are now running a pilot project in Cape Town, sponsored in part by the City of Cape Town and the Medical Research Council, that is investigating the use of the clinics as a screening platform.

Using immunization clinics for testing is not as ideal as a hospital would be, as in the hospital the doctors can operate in a very controlled environment, says Professor Swanepoel. However, he notes that if the testing happens at the six-week immunization screening, it can “work very effectively” as the babies still sleep a great deal, and it is essential for the baby to be “quiet and restful” during the test.

7.1.2 What is the role of early intervention in assisting deaf children to develop written language?

Once detection of deafness takes place, intervention needs to follow. This is the recomendation of all three interviewees. Professor Swanepoel discusses this below:

> Implementing universal screening programmes is a very comprehensive process and does not only entail the implementation of screening but also ensuring the support structures for diagnostic services and early intervention services being available. We have recommended that this be initiated at pilot sites that can serve as centres of excellence and also as places where research data can be gathered to ensure the implementation in the unique SA context is evidence-based.

As noted by Professor Swanepoel in the previous section, children need intevention in order to develop their language ability. The importance of early intervention is emphasised by Mr. Bell, who recommends “immediate intervention.” For instance, parents who choose aural/oral language for their child will need to take the following steps, says Professor Swanepoel:

> If they choose the aural route then amplification would be the very first step to make the most of the child's residual hearing. This means starting with hearing aids and possibly considering a cochlear implant in the case of a severe-to-profound child. Along with this first step the early communication intervention process must be initiated. The child will still need intensive support that is primarily parent-based training initially in terms of communication stimulation etc.

A recent conference, the EHDI (Early Hearing Detection and Intervention) in Africa Conference in Johannesburg, in 2007 (13–14 August), has made a contribution towards the development of UNHS and intervention in South Africa. According to Professor Swanepoel, the conference brought together different groups involved in EHDI services, such as "teachers, interventionists, audiologists, ENTs and paediatricians." As the opening of the meeting was done by the minister of health, this resulted in greater public awareness. Furthermore, explains Professor Swanepoel, "the conference proceedings were published in the *International Journal of Audiology* as a supplement and this information is being used to motivate for service delivery and to establish pilot programmes around the country. So it has provided a foundation from which we and other[s] can work to develop, advocate and motivate for wider implementation of these services."

7.1.3 What is the role of the government regarding screening and implementation and the prospects of deaf learners in education and, later, the work force?

Despite hopes of greater implementation raised by the EHDI in Africa Conference, in order to have widespread screening, government support is necessary. Currently, there is a lack of backing because of other, seemingly more urgent, health challenges. For instance, Professor Swanepoel explains that South Africa has many health care issues, particularly "life-threatening conditions such as HIV/AIDS and tuberculosis." Because there is so much focus on such illnesses, "non-life threatening conditions such as hearing loss do not receive the attention" that they should have, he notes. In order to overcome this, says Swanepoel, it is necessary to prove the validity of early detection programmes in terms of effectiveness and costs: "that the long-term benefits outweigh the initial costs of implementing and running such a programme."

The need for further government intervention is not restricted to screening and intervention; in other areas, the government also needs to do more to help people with disabilities. Mr. Webb explains that when the "RDP [Reconstruction and Development Programme] happened in 1994 . . . the government created the Office of the Status of Disabled People, that's called OSDP, and they issued a document called the Integrated National Disability Strategy and . . . the thinking at the time was that all the provinces would issue their provincial disability strategy." According to Mr. Webb, each

municipality was meant to have a disability desk. The person working there was supposed to "support both internally, the municipality, towards hiring disabled people, getting your equity up . . . and externally, giving advice to companies and so on."

Hiring sufficient numbers of people with disabilities has not happened based on original projections. As Mr. Webb explains, "The government departments are much less than the 2% target of employment. That target started off in 1998 as 5% - that's the Employment Equity Act. And it got whittled down to 4% about a year later, and now it's 2%." While some people with disabilities, Mr. Webb says, may feel insulted by a quota system, to many it is essential to basic survival:

> I think it depends where you are, on your education and social standing. If you're well educated, you might feel that way. If you haven't got a meal tomorrow . . . then you don't give a tinker's cuss, as they say, as to what people call you. They just want something: They want to be able to get around - they would love to have a road outside their house, but they would first of all [would] love to have a house so you know it's relative priorities up the social scale.

However, Mr. Webb also emphasizes the importance of "intellectual and academic standards" for people with disabilities: A person with a disability who is employed needs to be able to do the work for which he or she has been hired. As he says, "If you are a clerk, you must be able to do everything a clerk must do. If you're a professional person, you must be able to do that. And if you're a lawyer and you can't get into the court, because there's steps there, then fix the steps but don't not employ the lawyer."

In addition to workforce challenges, in the education sector, children with disabilities, who one day will form part of the workforce, are not always adequately provided for. For instance, Mr. Webb notes, in the Nelson Mandela Metropole, the capacity of schools for children with disabilities is disproportionate to the number of children with disabilities. To compound the problem, the disability sector "has been extremely slow, disorganized . . . and have not taken the government to task over all these years," says Mr. Webb.

Thus, the government may need to be held more accountable. The NGOs could play a greater role in pushing for this. According to Mr. Webb, "the NGOs haven't had a united front to deal with government and say, 'Health should be doing *this* for us. Education this. Social development, Housing etc.' So then it's been very much up to the initiative of key people within those government departments at national level as to whether anything has really happened."

7.1.4 For a parent whose child is diagnosed with severe-profound hearing loss following screening, what would be your reasons for recommending either medical intervention/teaching aural language or the use of sign language?

There is no clear answer to this question, which remains a controversial one worldwide, as discussed in the literature review in Chapter 2. Mr. Webb, because his focus is on disability in general, felt that he was not able to give an opinion on this issue, though he suggests that the choice of language may depend on the level of deafness of the child. Professor Swanepoel too indicates that both are options:

> Of course every case is different and an individualized counselling approach is necessary. Language is the most important part of the intervention process so the options for language would be discussed with parents so that they can make an informed decision. . . . Since the majority of parents (>90%) with children who have hearing loss are hearing themselves they choose this route. If however the parents want to go the route of sign language they are referred to the appropriate service-providers to start this process, if they want hearing aids in conjunction with this approach it would be provided but based on the parental choice - informed choice of course.

Mr. Bell is strongly in favour of teaching children spoken language as the majority of people use this. He feels that not being reliant on a translator to communicate with hearing people promotes "independence," "self-esteem" and "communication." He notes that if a deaf person does not have the option of learning speech, for instance, if someone has no available help and the only choice is sign, then under these circumstances, this is the right approach, but only as a second option. He suggests that "you'd really have to have no chance of a cochlear implant or any hearing apparatus to

help you and the doctors would have to be in absolute agreement that nothing, on earth, medically, would be able to be of help before that route. That's how strongly I am against signing and for oral communication." Mr. Bell's beliefs regarding sign language are motivated by research he has read, which indicates that less than 1% of deaf people would "never be able to talk properly . . . or . . . communicate on an oral level."

However, an important factor is the level of support as, without enough support, children with severe deafness may have to learn sign language. According to Mr. Bell, in his experience, the role of parents is important. He notes that "certain parents are more involved in the education and the betterment of their children and where you have a strong parental awareness and backup, you have a child who develops language at a quicker pace and is more successful in communicating." He adds that this support is not limited to biological parents as it could be anyone taking care of a deaf child, such as guardians or brothers: "if they are aware, they're fired up, largely success will result then." The child's motivation also plays a role, he notes.

7.1.5 How can children be assisted with their education and specifically writing?

The previous section clearly indicates the importance of parental support in the communication and education of a deaf child. Mr. Webb too believes that parents are vital role players in the education of children with a disability. He states that "it's been underemphasised that the parent is the beginning of the educational cycle right through those different levels of education to tertiary education."

Educational institutions, like parents, also need to support deaf learners, even at tertiary level, which doesn't always happen, as Mr. Webb indicates. With educational institutions, teachers can also provide support. Mr. Bell uses a range of ways to approach writing to assist the deaf children in his class. For instance, sometimes he uses unfinished stories and asks the children to complete them, though this may happen orally rather than in writing. Another idea he uses is passing around papers in the class on which each learner writes one line of a story and then folds the top of the paper over it and passes it to the next person to write on. He has also used poetry and rhyming words, as well as exposing his class to "interesting examples of language which they wouldn't normally be confronted with." He employs a range of media to expose the

children to this language. For instance, he might use the internet or a film, or he might act something out or ask the children to do so. One child, particularly, was struggling, and once he acted out the occupation, Mr. Bell gave the English word and taught the class how to spell it. In this way, he helps the children to "experience and feel the word where possible."

Mr. Bell has also taken the children to the park and explained the "concept of a moment" by showing the children for what a brief period of time the seesaw touches the ground. His overall aim is for the children to enjoy language and to realize that words can be used in different ways, "that language can be used in the most detailed and incisive way to mean exactly something or it can be used in a way that is so vague that you can't actually figure out what the word is supposed to be meaning in that particular environment so allow the confusion but also the clarity and it's good when the confusion comes because then we can talk about it and see if we can begin to focus on the confusion and make it less confusing."

When teaching writing, Mr. Bell has found drafting particularly useful. The reason for this, he says, is that it encourages creativity which, he explains, is "the goal, one of the major goals." After being creative, then the children can focus more on corrections:

> One time it will just be let's get the story going, and let's have fun while you tell it to us. Next time, we'll have we'll break it up into paragraphs. By next time, we'll actually make sure that if two people are speaking, we don't have it on the same line, and the next time, we'll rather instead of using words like "frightened" and "scared," we'll think of other things like "horrified" and "absolutely anxious" so starting to have your connotation of a similar feeling but using interesting words to describe the same thing.

During the drafting process, Mr. Bell will ask the learner to read pieces of a story during the writing stage, and he asks questions on the story, such as discovering the direction the story is taking and whether the language needs to be more formal:

> I would say ". . . Where are you going with this?" And sometimes I'd get an answer. Sometimes "I don't know" would be the answer. But . . . to answer your

> question properly, we can do as many as five or six or seven edits, and every time the child comes to read, to me, and once the child has read to me, before I edit, I'll ask them to go and see if they can find anything to change, and then what I like them to do once they've written it in pen/pencil . . . [is] to put it onto the computer so that we can edit it on the computer so it takes less time because it's a very time-consuming exercise. It can take weeks to get one piece of work really that is of some worth without too many of the basic mistakes.

The use of questioning is dialogic as Mr. Bell tries to avoid giving his own ideas. Rather, he may ask learners about what emotions they were experiencing during the writing process and why they had written in a certain way. The aim of this is to extract responses from the children. The dialogue may also involve disagreement. For instance, he notes that a child may refuse to take a story in the direction that Mr. Bell thinks it should go. In this case, he encourages the child to pursue his or her own idea.

The drafting process also involves the correction of grammar, about which Mr. Bell is strict. Sometimes Mr. Bell alters the grammar himself. At other times, he circles it and says, ". . . This is incorrect. Go and figure out why. Read it to yourself. Listen to it, and tell me if it sounds right to you."

While all the different approaches Mr. Bell uses need to work together to improve the children's writing, he has found drafting "the most fulfilling" as the children keep their drafts and can see the progress they have made. The next time the children write they are also "far less likely to make similar mistakes and in actual fact the flow of their language has improved."

7.2 SUMMARY

This chapter focused on the responses of the interviewees to five main questions. These questions were drawn from the second literature review in Chapter 5, which suggested recommendations in order to improve the writing of deaf children in the Nelson Mandela Metropole. The interviewees, who were experts in their fields relating to deafness or disability, largely supported the findings of the literature review.

First, an essential step needed to assist deaf children is the introduction of UNHS and second, early, continued intervention is necessary. Third, in order for these to take place, the government's role is essential, as it is in ensuring that there is enough schooling and enough work for those with disabilities. Fourth, there is no consensus on what language a deaf child should use, whether sign or spoken language. This reflects the divide evident in the literature review in Chapter 2 which indicates there is no definite agreement on this. If cochlear implants, and adequate support for implanted children, were available to all deaf children, the researcher would advocate oral language for the vast majority because of the proven link between spoken language and writing and to integrate the deaf child into hearing society, which is predominant. However, at least while cochlear implants still remain unreachable for the majority of deaf children, sign language should also be an option. Finally, important role players in the writing experiences of deaf children are their parents and teachers. Parental involvement is vital in fostering early emergent literacy skills, and teachers with children who have minimal language ability should also consider using these. For children who are more advanced, while a range of approaches is useful when teaching writing, teachers should specifically consider the value of a drafting approach and the use of interactive approaches to writing.

7.3 REFLECTION ON THE STUDY

These five recommendations on improving the writing of deaf children were developed after a second literature review in Chapter 5 and qualitative interviews with experts in the fields of disability, deaf education and communication pathology. This qualitative research was deemed necessary following a quantitative comparative study of the writing of 30 deaf children and 30 hearing children. The results of the quantitative research indicate that in the Nelson Mandela Metropole, the writing of deaf children is significantly weaker than that of hearing children. These findings are expected because their deafness is likely to have been identified passively, long after the window period of six months within which a newborn baby should receive intervention, according to the Joint Committee on Infant Hearing (JCIH) (2007, 898). The Deaf Federation of South Africa (DEAFSA) (2009, under "Deaf Education") attests to the late diagnosis of deaf children in South Africa and the subsequent impact this has on their schooling and career opportunities.

One future area of research arising from this dissertation is that of language of instruction. Because of the limited number of deaf children in the Nelson Mandela Metropole whose parents/guardians gave permission for them to participate in this study, the researcher included in her sample both deaf children communicating via speech and deaf children communicating via sign language. While it was beyond the scope of this study, it would be interesting to compare the written English abilities of signing and speaking deaf children, perhaps extending the study to include the whole of the Eastern Cape in a quantitative study. Particularly interesting would be an analysis of possible reasons behind differences in performance, if these differences were significant. While this would still not clear up the old debates over the two models of deafness, it might well provide a clearer insight into unique factors underlying signing and speaking deaf children in South Africa.

A second issue to investigate is the English writing of deaf children who primarily communicate via speech but whose first language is not English. The combined effect that deafness and speaking a first language other than English might have on the English writing abilities of a child would be particularly relevant in a South African context because of the large number of different languages spoken in this country.

Another potential area for research is ways of making cochlear implants more accessible. At present, while there has been much written over which model of deafness is better, this is not a debatable issue for many parents/guardians of the profoundly deaf: In the absence of the availability of cochlear implants for the majority of South Africans, the degree of deafness often makes sign language a necessity for the profoundly deaf, rather than a choice.

There is a great deal that can be done in South Africa so that the majority of deaf people can have a choice of language (sign or spoken), as well as a better chance of developing age-appropriate language and writing skills. This begins with early testing and intervention and government support. Developed countries have already indicated the benefits of newborn screening for a country, such as the “principal cost savings” on the expense related to “special education and training [which] is substantially reduced for deaf and hard-of-hearing children whose language development is consistent with their

non-verbal cognitive potential" (Hayes and Downs 2000, 64). From an economic, ethical (Durieux-Smith 2004, under "Universal Newborn Hearing Screening: A Question of Evidence") and linguistic perspective, the government needs to implement a countrywide infant screening programme and provide intervention for deaf children in their early years as this will affect their language and writing ability for the rest of their life. The contradiction is that while the government is aware of the vital importance of the first years in a child's life for future development (*Education White Paper 5 on Early Childhood Education* 2001, 8), deaf children sometimes go undiagnosed until the age of eight (DEAFSA 2009, under "Deaf Education"). This is the frustration – and the challenge.

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Appendix A

De Wet Swanepoel: Signed consent form and interview transcript (skype interview)

APPENDIX A

Faculty of Arts
NMMU
Tel: +27 (0)41 504-2266

Ref: H/08/A/ALS-001
Dear Professor Swanepoel

I am a student completing a master's degree at Nelson Mandela Metropolitan University and am interested in helping children with hearing loss to improve their written English. The reason for this letter is to provide you with background information on my study and to request whether you would be prepared to participate in an interview.

I would like to achieve two goals in my study:

1) To investigate how the written English of children with hearing loss differs from the written English of mainstream children without hearing loss
2) To make recommendations about the teaching of written English to children with hearing impairments

The benefits of the research are that the results could be used to develop a greater understanding of the level of written English of children with hearing loss. The research recommendations could also help children with hearing loss to improve their writing skills. Because of your expertise in universal newborn hearing screening and audiology, my questions to you will be focused on early hearing detection and intervention for deaf/Deaf children.

You have the right to query concerns regarding the study at any time. The email address of my supervisor, Dr Diana Ayliff, is provided below. Please feel free to contact her. You are entitled to withdraw from the study at any time if you wish, and you also have the right not to answer any questions. In addition, please could you let me know should you not wish to be identified by name in my research.

Thank you for your time. It is greatly appreciated. Please could you fill in the form below and fax to 086 5500 706.

Yours sincerely

Carolyn Weir
RESEARCHER

Contact details: Carolyn Weir: carolynweir@absamail.co.za
supervisor Diana Ayliff: diana.ayliff@nmmu.ac.za

DATE: 10/09/2007

SURNAME: **Swanepoel**

FIRST NAME: **De Wet, Professor**

PLEASE MARK THE BOX CONTAINING YOUR ANSWER:

☒ Yes, I consent to participate in the interview. I understand and agree to the conditions in the attached letter.

☐ No, I do not consent to participate in the interview

SIGNATURE: _____

Skype interview with De Wet Swanepoel

Associate professor, Department of Communication Pathology, University of Pretoria

[07:55:03 AM] Carolyn Louise Weir: Good morning. Thank you for being prepared to help me with my research.

[08:02:42 AM] De Wet Swanepoel: Hi Carolyn.

[08:02:48 AM] De Wet Swanepoel: Sorry I'm slightly late.

[08:03:53 AM] Carolyn Louise Weir: That's no problem - I think I was a bit early!

[08:04:06 AM] Carolyn Louise Weir: Before I start asking questions, I wondered: Would you be interested in seeing the chapter in which our discussion today will be included? If so, I would be very happy to send you a copy in a few months once it is complete.

[08:04:27 AM] De Wet Swanepoel: Yes please.

[08:04:47 AM] Carolyn Louise Weir: That will be great - I will email it to you once it is complete.

[08:05:11 AM] De Wet Swanepoel: Thank you.

[08:05:59 AM] Carolyn Louise Weir: My first question concerns public awareness of UNHS. I saw that in your 2009 article, you noted that less than 1% of public hospitals offer UNHS. How can people increase awareness of the need for UNHS?

[08:09:34 AM] De Wet Swanepoel: Well I think it should be done on several levels. Firstly at governmental level and in the DOH the role players should be made aware of the importance of identifying children early for the individual and family but also for the society in general indicating the long term socio-economic benefits. Also, however, there should be a greater awareness amongst mothers - this could be facilitated at maternity care facilities or maternity classes for example. Of course public awareness campaigns are also useful in this regard.

[08:10:01 AM] De Wet Swanepoel: In the end however it needs to come from the top in terms of legislation to really implement on a large-scale.

[08:11:46 AM] Carolyn Louise Weir: So in essence, the key to greater awareness will require government support in the form of enacting laws and implementing them?

[08:14:35 AM] De Wet Swanepoel: Yes, well, implementing universal screening programmes is a very comprehensive process and does not only entail the implementation of screening but also ensuring the support structures for diagnostic services and early intervention services being available. We have recommended that this be initiated at pilot sites that can serve as centres of excellence and also as places where research data can be gathered to ensure the implementation in the unique SA context is evidence-based. We are currently running several pilot sites but have not had government really backing this as yet.

[08:17:02 AM] Carolyn Louise Weir: What might be reasons for the Health Department and the government's not yet implementing UNHS and EHDI programmes in South Africa?

[08:19:48 AM] De Wet Swanepoel: South Africa has a lot of health care challenges, much of which is concentrated around life-threatening conditions such as HIV/AIDS and tuberculosis. These conditions are currently the focus areas for spending and non-life threatening conditions such as hearing loss do not receive the attention they deserve. It would be important to demonstrate that early detection programmes here in the SA context are effective and also to motivate that the long term benefits outweigh the initial costs of implementing and running such a programme.

[08:23:28 AM] Carolyn Louise Weir: I saw in one of your earlier articles on UNHS that an effective approach in a South African context, and other developing countries, seems to be the use of immunization clinics rather than hospitals.

[08:26:28 AM] De Wet Swanepoel: Yes, well, we have done some initial studies on this approach and recent reports from Nigeria on the same topic have also confirmed the feasibility of this approach. We are now running a pilot project in Cape Town, sponsored in part by the City of Cape Town and the Medical Research Council, that is investigating the use of the clinics as a screening platform. The reason behind this is the fact that many babies in SA are born outside of hospitals and secondly that many hospitals discharge babies within the first 12 hours after birth and the screening of infants is preferable done after 12 hours after birth.

[08:30:29 AM] Carolyn Louise Weir: Would you recommend that testing babies when they go for immunization would be more effective for the minority of mothers who give birth in hospitals as well?

[08:33:35 AM] De Wet Swanepoel: The best place to catch them is in hospital at least 12 hours after birth. The hospital is a captive audience and therefore very controlled in terms of screening. But every district is different - certain parts of SA have an almost 100% birth rate in hospitals and other sections have a 50% birth rate in hospitals. Therefore we will probably need context-specific models for screening these infants. The 6-week immunization screening can work very effectively, but the older children become the more difficult it is because they don't sleep as much. The tests are very sensitive to movement and noise so a baby needs to be quiet and restful, preferably sleeping, when being tested.

[08:34:05 AM] Carolyn Louise Weir: For a parent whose child is diagnosed with severe-profound hearing loss following screening, what would be your reasons for recommending either medical intervention/teaching aural language or the use of sign language?

[08:39:31 AM] De Wet Swanepoel: Of course every case is different and an individualized counselling approach is necessary. Language is the most important part of the intervention process so the options for language would be discussed with parents so that they can make an informed decision. If they choose the aural route then amplification would be the very first step to make the most of the child's residual hearing. This means starting with hearing aids and possibly considering a cochlear implant in the case of a severe-to-profound child. Along with this first step the early communication intervention process must be initiated. The child will still need intensive support that is primarily parent-based training initially in terms of communication, stimulation etc. Since the majority of parents (>90%) with children who have hearing loss are hearing themselves they choose this route. If however the parents want to go the route of sign language they are referred to the appropriate service-providers to start this process; if they want hearing aids in conjunction with this approach they would be provided but based on the parental choice - informed choice of course.

[08:42:33 AM] Carolyn Louise Weir: In terms of (sign) language development and literacy, how would newborn/infant screening impact on children with irreversible hearing loss whose parents choose to teach children sign language?

[08:46:19 AM] De Wet Swanepoel: Early detection of hearing loss facilitates early intervention within the critical language development period. The benefit is language development that can be within the developmental ranges for children without hearing loss. Language is the key here; whatever mode is chosen, the children benefit from implementing a language approach early and providing the necessary accompanying intervention to promote and facilitate this development. Language is the basis for later literacy skills, so the better the language development early on, whatever the mode of communication, the better the prospects for good literacy.

[08:48:00 AM] Carolyn Louise Weir: I read in your article "Early Hearing Detection and Intervention in South Africa" that approximately "6116 infants will be born with or acquire permanent bilateral hearing loss in the first few weeks of life" and that most of them will be part of the public sector.

How much likelihood is there of these children developing age-appropriate fluency in a language (whether sign or spoken)?

[08:51:23 AM] De Wet Swanepoel: Without early detection the likelihood, based on years of research on children identified late with hearing loss, of age-appropriate fluency in language is slim. Of course there is a large range and certain children with additional support may do very well, but on average language abilities will be severely delayed. Another factor to take into consideration here is the degree of hearing loss and secondary developmental disabilities that may co-occur. The worse the hearing loss the more severe the language delay.

[08:52:41 AM] Carolyn Louise Weir: So UNHS is absolutely essential in order to give children the best possible chance to develop a solid base in their first language?

[08:54:01 AM] De Wet Swanepoel: Yes, that has been clearly demonstrated by large-scale research studies now in the USA and UK. No other method can result in similar outcomes that can maximize the child's potential.

[08:54:41 AM] Carolyn Louise Weir: My final question relates to the recent EHDI in Africa Conference. In your most recent article, you referred to the first EHDI in Africa Conference which resulted in the development of a working group for EHDI services. How might this impact on UNHS programs and intervention in South Africa?

[08:58:23 AM] De Wet Swanepoel: This conference united several role-players in the entire process of Early Hearing Detection and Intervention (EHDI) services including teachers, interventionists, audiologists, ENTs and paediatricians. It increased the public awareness, especially since the minister of health opened the meeting. Also the conference proceedings were published in the International Journal of Audiology as a supplement and this information is being used to motivate for service delivery and to establish pilot programmes around the country. So it has provided a foundation from which we and others can work to develop, advocate and motivate for wider implementation of these services.

[08:59:02 AM] Carolyn Louise Weir: Thank you so much for your time and help. I greatly appreciate it.

[08:59:42 AM] De Wet Swanepoel: It's a pleasure - best wishes for your studies

[09:01:01 AM] Carolyn Louise Weir: It is exciting to be doing research at a time when there is so much hope for deaf children! Goodbye - and thank you again.

[09:01:21 AM] De Wet Swanepoel: I agree - all the best.

Appendix B

Tony Webb: Signed consent form and interview transcript

Faculty of Arts
NMMU
Tel: +27 (0)41 504-2266
Fax: +27 (0)41 504-2229

Ref: H/08/A/ALS-001
Dear Mr Webb

I am a student completing a master's degree at Nelson Mandela Metropolitan University and am interested in helping children with hearing loss to improve their written English. The reason for this letter is to provide you with background information on my study and to request whether you would be prepared to participate in an interview.

I would like to achieve two goals in my study:

1) To investigate how the written English of children with hearing loss differs from the written English of mainstream children without hearing loss
2) To make recommendations about the teaching of written English to children with hearing impairments.

The benefits of the research are that the results could be used to develop a greater understanding of the level of written English of children with hearing loss. The research recommendations could also help children with hearing loss to improve their writing skills.

You have the right to query concerns regarding the study at any time. The email address of my supervisor, Dr. Diana Ayliff, is provided below. Please feel free to contact her. You are entitled to withdraw from the study at any time if you wish, and you also have the right not to answer any questions. In addition, please could you let me know should you not wish to be identified by name in my research.

Thank you for your time. It is greatly appreciated.

Yours sincerely

Carolyn Weir
RESEARCHER

Contact details: Carolyn Weir: carolynweir@absamail.co.za

Supervisor Diana Ayliff: diana.ayliff@nmmu.ac.za

DATE: 8/9/09

SURNAME: **Webb**

FIRST NAME: **Tony**

PLEASE MARK THE BOX CONTAINING YOUR ANSWER:

☑ Yes, I consent to participate in the interview. I understand and agree to the conditions in the attached letter.

☐ No, I do not consent to participate in the interview.

SIGNATURE: DWebb

Interview with Tony Webb

Disability consultant, owner of Disability Options

C: I was just interested, first of all, are you an NGO or . . . ?

T: No, I'm not an NGO. I'm independent. I call myself a disability consultant. I have a trade-in name called Disability Options. And I've been operating on some or other level since . . . [my son] became a paraplegic back in 1990, and the next significant event from that point of view was . . . [my wife] having a stroke in 1993. That was the introduction;- no question at that point in time of consulting, just learning to cope with physical disability on its own . . . it's only much later that you realize that you were gathering lots of information that one wanted to share with other people and by getting involved particularly in accessibility . . . and APD, a physical disability organization, slightly to learn about accessibility, ramps and toilet space and all that stuff and then realizing that nobody else knows about it and I could sell time to organizations that wanted to, to know about that and then once you get, you know, if you have an enquiring mind, you know, coming from a scientific background, once you start dealing with the physical disabilities it's only a small step to – to realize that accessibility relates to deafness and blindness and mental capacity and so on.

C: And, and I understand that you - I understand that you've been doing a lot of work with NMMU. Are you still involved there?

T: For many years, I've been pressing - pressurising them to form a disability unit because there was no, virtually no, backup for disabled students there at all. And my contacts there really started off with Greg Saunders in the IT department who was employed, as opposed to a student. And eventually they asked me to do an accessibility survey and that was in the days of UPE so we did UPE, the campuses here in PE, and . . . the Technicon also asked for an access survey of the Technicon and those two – at that time Vista, rather Mission, you know, the Missionvale campus wasn't part of those two entities, it was only when they merged that we eventually were asked to do the Missionvale campus so in actual fact, I've . . . trotted round all, practically every building on all the campuses including George. We've been to George and done that as well, and the two campuses at George, York Street and Saarsveld, so we have a very

intimate knowledge of every – every nook and cranny of the university and armed with that sort of information, eventually they asked me to, after me pressurising them for so long, they said well, I must come in and have a contract and start up a disability unit. That was probably in 2006, and it was initially a three-month contract and after three months we were making such – having such fun there – I was, that I agreed another three months, and after that three months I said, "Well this is no longer really any fun. . . . I've dealt with all the physical disability stuff. You must now spend money on putting right all those things I've identified in the survey that I've finished and you'd better start looking at how to help the students with low vision because we now have to eliminate blind students; we can't handle them because the Braille implications are too expensive and totally deaf students we can't handle them because the sign language implications are too difficult, so rather send those students to the universities that are managing to provide them with support around the country. . . ."

C: And if we look a little bit broader and we look at the government and South Africa in general, to what extent does the national government policy support people with disability in theory, on paper?

T: . . . When RDP happened in 1994 . . . the government created the Office of the Status of Disabled People, that's called OSDP, and they issued a document called the Integrated National Disability Strategy and it, the thinking at the time, was that all the provinces would issue their provincial disability strategy.

C: So they'd each have their own –

T: So that everywhere would be, you know, promulgating or dispersing downwards all the good stuff and that's where the term "disability desk" started to happen, and all municipalities were supposed to have a disability desk with a person that was able to support both internally, the municipality, towards hiring disabled people, getting your equity up, [inaudible] and externally, giving advice to companies and so on. The tertiary education business was not doing very well during this period. Neither was the education business in general.

C: Just generally they weren't doing well or in terms of - ?

T: Well, if you look just simply at the Eastern Cape or at the Metro and we could dig out the numbers that say how many disabled children there are and you look at the

capacity of the . . . special schools, then you know that they're not providing for all the kids that are out there. There's probably a 10 to 1 deficiency between the capacity and the number of kids that need education, whether they be physical, mental, blind or deafness or multiple. The disability sector has been extremely slow, disorganized, haven't got a line of adjectives ready to trot out and have not taken the government to task over all these years. Nothing to do really with RDP if you go back to the origins of some of those NGOs . . . some of them go back 20, 30, 40 years. . . . Anyway, to get back to the point, so because the NGOs haven't had a united front to deal with government and say, "Health should be doing *this* for us. Education this. Social development, housing etc." So then it's been very much up to the initiative of key people within those government departments at national level as to whether anything has really happened.

C: So it's basically, you would say, a lack of general organisation. There are small groups doing something here and small groups doing something here, but they're not combining and chivvying the different departments? They're not trying to bring in the different departments to their vision? The departments are almost operating separately from the NGOs?

T: Neither from the NGO front, lack of unity of the NGOs, just stay in their own sector of blind, deaf, physical, whatever or from the government through the OSDPs, I mentioned earlier, none of them are pushing disability as a uniform thing initially. Ok, we all know that there's differences in the way that different disabilities need help and being made independent, empowerment, but unless the public recognises that disability is here to stay and it could happen to you tomorrow and therefore, you know, be a bit more tolerant, and understanding, then we end up [in] the situation we are now. The government departments are much less than the 2% target of employment that . . . had been set. That target started off in 1998 as 5% - that's the Employment Equity Act. And it got whittled down to 4% about a year later, and now it's 2%.

C: 2% of?

T: [2% of] your workforce should have a disability. In fact, what the Employment Equity Act says is that your employee profile should reflect the demography of the area you're operating in.

C: How do you feel about the government setting a quota – that you must have 2% of people – I would wonder if some people would feel insulted that they were being employed because they had a disability. . . .

T: It's the whole business of affirmative action. If you're reasonably well educated as a disabled person, then you might feel that way. That you've got this job because – not because they're sorry for you but because the company's been told you must have 2%. . . . I think it depends where you are, on your education and social standing. If you're well educated, you might feel that way. If you haven't got a meal tomorrow . . . then you don't give a tinker's cuss, as they say, as to what people call you. They just want something: They want to be able to get around - they would love to have a road outside their house, but they would first of all love to have a house, so, you know, it's relative priorities up the social scale. That's why actually I support the government's approach to saying it's - 2% is a reasonably – 2% is less than half of the disabled people in the country, the proportion of disabled people; therefore let's aim for that, and let's get as many people into companies but don't relax on the intellectual and academic standards for that person. I don't condone that at all. If you are a clerk, you must be able to do everything a clerk must do. If you're a professional person, you must be able to do that. And if you're a lawyer and you can't get into the court, because there's steps there, then fix the steps but don't not employ the lawyer. Rather employ the lawyer. . . .

C: And, just looking now at deafness. I almost touched on it just now outside. Recently there've been pilot studies which have been done on universal newborn hearing screening by someone called De Wet Swanepoel, Professor De Wet Swanepoel. What he wants to do is he wants to, he's hoping, sometime that he'll be able to, that there'll be in South Africa the option to test all newborn babies, not probably in the hospital because so many births take place outside the hospital but within the first three months at immunization clinics. He would like to be able to test them for hearing because about 50% of babies are not at-risk babies for hearing loss – so there's no - 50% of babies who have hearing loss are not at risk, there's no ways anyone could know that they were going to have a hearing loss just by looking at risk factors, and so he's looking into that, and a child has got basically, well, they've got two options if they find they've got a hearing loss, one is to go for the medical approach , which would be hearing aids, which are provided free at public hospitals or cochlear implants if it's really bad. That is limited as to how many people can actually have them. There is one project where they

are offering free implants. And on the other hand, there will be sign language where the child might be living in a family which probably has no knowledge of sign language. What would you – just your own opinion – what would you recommend if you were looking at a child who'd just been identified with a hearing loss; which route would you recommend?

T: . . . I don't feel qualified to answer that.

C: Okay.

T: Yeah. What's my gut feel – yes, identify the kids, you know, the earlier identification and intervention must be good. But as to whether it goes the medical route or a sign language route, perhaps it's a combination of both because that child with hearing loss will also be in a extreme range of hearing loss from nothing at all to needing some gentle hearing aid. The ones with nothing at all eventually are going to have to learn sign language; the sooner they start learning the sooner the parents understand that side of it, you know. . . . If it's the sign language route the parent [s] . . . all of a sudden . . . have to go from maybe having hearing siblings who never had this sort of thing to now having to contend with a child that is going to depend on sign language, so they need to learn sign language and so on. . . .

C: . . . You were mentioning – you were talking about parents and their role with children with disabilities. How important is the role, just speaking generally about disability overall, how important is the role of parents in supporting children's education – children with disabilities?

T: I think it's very important. It's been underestimated over the years. And it's been underemphasised that the parent is the beginning of the educational cycle right through those different levels of education to tertiary education. And the parents aren't given – in any case parents aren't given a kit of instructions when they have a child. We all have a child for the first time and you have to learn the hard way to raise them and to - whereas if the child from the beginning is disabled then we have a multiple situation of raising a child, depends whether it's the first child or the nth child, and raising now - within the say, whether it's deaf or blind or . . . physically disabled. . . . The child that's now deaf, you're talking about communication systems, deaf or blind, and how on earth does either of those categories pick up language.

C: And in terms of South Africa where so many of the people in the population have a rather low level of education, do you think that plays a key role in the development of children's disabilities?

T: Yeah, I think that's particularly so in the case of deafness and blindness, more so than physical disability. . . . And the miracle that I see, just not to digress too far, is that somehow some of the kids and their parents drive their way through primary and high school education and get a matric, present themselves at the door of the tertiary education place and get entrance; you know that's the wonder of the world . I think, the determination of that child and their parents, and they embark then on a level of education far more difficult than they've had so far in their high school and junior school days, with often . . . no more support, in fact less support, than they had at high school. When I say high school, in the case of - I can only quote blind, so we have Khanyisa School for the Blind here that teaches the kids how to handle life as a blind person. Now they go along with the matric to the university, and the university says, "Well, we don't quite know how to handle you, you know, you want Braille books. Where do we get Braille books?" And it's the equivalent in deaf, probably; "We can't handle you, because you're using sign language or, you know, hearing aids; where're you going to sit in the class . . . ? Did I answer the question?

C: Yes, thank you. What I'm hearing from you is that there seems to be, from government level and from educational institutions, particularly higher/tertiary education, there seems to be a lack of awareness and also seems to be a lack of concern. I don't know if I'm understanding that correctly – many people just don't seem concerned?

T: They're quite happy to have turned away or discouraged disabled students and it -

C: Are you talking about tertiary institutions?

T: Talking about universities and, you know, all that lot. Tertiary education have been quite happy to – sufficient unto the day is the evil thereof, you know. So that means it's only because of activists and advocates for the rights of children that we're starting to see more get into education at all and that puts the pressure on the crèches and the primary schools and the high schools; so now disabled students of all disabilities are presenting themselves at the university admissions, who are saying, "Ah, we'd better

include this in the admissions form." So you know if you look back over the years we'd probably find ten years ago there was no mention of disability. . . .

And I blame it on the NGOs and the government, not so much the Education Department, they're just pawns in the game and they haven't taken the initiative they should. But certainly, the government hasn't worried. . . . So the NGOs that are supporting people I believe have been so fearful of losing their subsidies that they're full of well-meaning people that are very good at going out once a year and shaking their can on the tin corner . . . . They're not advocating strongly for the rights of the disabled child and adults.

C: And there's just one last question I wanted to ask you about. Writing and reading, literacy. Particularly writing. How crucial is that for children with disabilities, to be able to [write]?

T: It must be as important, or if not more important than the [inaudible]. The child must not be allowed to get away with not reading, writing and arithmetic because it's their key to their future. Depends what you envisage the disabled child to be. This is where you must go back to the medical model versus the social model - you're familiar with both those. The medical one says: "Well you have a disability, so we will give you a disability grant; we will put you in a Cheshire Homes or a Lake Farm or somewhere like that, and you will please get your meals every day, and you'll get to be washed once a whatever, and you will sit on the stoep. And the sun comes up over there, so you can anticipate it over there; the sun goes down over there, but you'll have been inside to get your meal since then, so don't get disorientated and please be good - pat on the head – that's the medical model of disability. Don't for goodness sake want to have a job or want to read a book, or you know do a crossword. . . .

C: Thank you very much.

Appendix C

John Bell: Signed consent form and interview transcript

APPENDIX C

Faculty of Arts
NMMU
Tel: +27 (0)41 504-2266
Fax: +27 (0)41 504-2229

Ref: H/08/A/ALS-001
Dear Mr Bell

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Thank you for your time. It is greatly appreciated.

Yours sincerely

Carolyn Weir
RESEARCHER

Contact details: Carolyn Weir: carolynweir@absamail.co.za

Supervisor Diana Ayliff: diana.ayliff@nmmu.ac.za

DATE: 11/09/09

SURNAME: BELL

FIRST NAME: JOHN

PLEASE MARK THE BOX CONTAINING YOUR ANSWER:

☑ Yes, I consent to participate in the interview. I understand and agree to the conditions in the attached letter.

☐ No, I do not consent to participate in the interview.

SIGNATURE: [signature]

Interview with John Bell, head of department,
Partially Hearing Unit, Greenwood.

C: For a parent whose child is diagnosed with severe-profound hearing loss, what would be your reasons for recommending either a medical intervention/and aural language or on the other hand using sign language?

J: Could you make that question simpler? There are too many answers that you are wanting for one question.

C: If you knew of a child who was diagnosed with severe hearing loss would you say the child should take the aural route and then spoken language or should they rather go the sign language route?

J: No, I would encourage the oral route as much as possible.

C: And what would your reasons be for encouraging that particular (route?)

J: Well, we live in a world of hearing, speaking people and often, if you are signing, in an oral environment, there aren't translators to help you and I mean the most intimate of relationships are often, I think, the oral or being able to verbalize something. If you were to have an intimate relationship with somebody and you had to have a translator around all the time, it would seem that one would possibly not want to have too many. I think the point is also actually with not trying to be funny but I think that it lends itself to independence and to self-esteem and to communication which is such an important part of our lives.

C: And when you referred to self-esteem, you said that the child already benefitted – the sense of self already benefitted from speaking oral language. Would that be because then they could be part of a hearing community?

J: I believe so. If you are going to cut yourself off and you have the choice, I think if you have the choice it's different; if you don't have a choice, then by all means, you know, if you are born into an environment, a silent world, and there's nobody to help

you and you only learn to communicate with sign, and it's the only way you can, because you don't have any hearing, then obviously that's the next best bet, but I hope that never happens.

C: And I have recently read articles by someone called Professor Swanepoel, I think I mentioned him to you briefly, on universal newborn hearing screening in South Africa where they would test every single newborn child in South Africa if they could implement this. In your opinion what would you say would be the value of UNHS?

J: It would have exceptional benefit if it was followed up properly once the hearing loss had been diagnosed.

C: In other words, there must be intervention?

J: Immediate intervention. From the day that the baby leaves the hospital. Immediate intervention.

C: And in what ways would this screening be of benefit if it was followed up by an intervention?

J: Well it would raise the awareness levels of people and society not only to hearing loss but to the possibilities of other barriers to living and learning, so I would hope that there would be a whole lot of screening tests, of which hearing [is] obviously important, important, yes, [inaudible], yes the more screening tests the better .

C: And – for newborns?

J: Absolutely and not only for newborns; because let's just say we started something done like that in our country - there are so many children that have missed out, so it would be very nice for it to be offered free to anybody and everybody in our society to avail themselves of a good screening, so that if there was something wrong it could be helped.

C: And if some children did choose to go – if they were diagnosed with a very severe or profound hearing loss – and, well, irreversible hearing loss, and they chose, did choose, the sign language route, for some - for whatever - reason, how would, in your opinion, would newborn hearing screening impact on those children and the parents of those children? Would it also have an impact on them?

J: I don't understand your question.

C: If they, if they were screening for children and hearing loss and the parents decided they were going to go the sign language route rather than the oral route, so they were going to teach the children to sign, would it also be of benefit for the parents to have picked up on that hearing loss early?

J: I don't know how to answer that question. I'm not quite sure what the question is actually but the - could you rephrase/clarify for me please?

C: Is it beneficial for all children to have hearing screening whether they are going to learn spoken language or sign language? Is it good to pick up on that hearing loss very early, even if its not . . . [inaudible]?

J: I can't see the point of being screened and having a hearing loss found and then going for sign language. It just doesn't make any sense to me. We live in an oral world, technology is so advanced that children that are born – you'd really have to have no chance of a cochlear implant or any hearing apparatus to help you and the doctors would have to be in absolute agreement that nothing, on earth, medically, would be able to be of help before that route. That's how strongly I am against signing and for oral communication.

C: You feel it is definitely - sign language is definitely not the first route to take; it would definitely be oral first and then that [sign] would be the alternative?

J: Carolyn, my reading and things that I've been to in the past have led me to discover that of all the children and adults that have hearing loss, if 1% of them, only - there would be less than 1% that would never be able to talk properly and/or when I say, and

communicate on an oral level. There is less than 1% chance. It is not significant enough for me to actually make a case for sign language when I feel that children with a severe hearing loss because of lack of support, eventually people give up on them, and they just go into the signing quiet world. No. I think if the support system's not correct, I think if the education of the children and of the parents and of the community and of our country if it was absolutely, if we really cared and we knew what the possibilities were, anything is possible as far as oral language is concerned.

C: And at the moment most infants are born in the public health sector, going to public government hospitals and I was wondering how much, you were talking about in an ideal situation, there is so much that we can do for children who have deafness, practically how much chance, how much likelihood is there of children who are struggling with deafness at the moment, how much practical chance/option is there of their developing fluency in a language?

J: You mean in their mother tongue?

C: Yes

J: I also have thoughts on that. I think for every year of language lost, I read, you need an hour of intense language therapy every day and that's beyond school time. So if you have a hearing loss where your language delay is three years, you need three hours of intense language therapy every day and that includes parents and children and their friends and wherever they can be bathed in the language that they're supposed to be communicating in and then the chances of them communicating in a way that we are able to, will be possible, mostly.

C: Do you find that the children that you've taught have had that kind of exposure to language?

J: No. I - but I - to answer your question carefully, certain parents are more involved in the education and the betterment of their children and where you have a strong parental awareness and backup, you have a child who develops language at a quicker pace and is more successful in communicating.

C: So parental support is really something that's absolutely vital?

J: Any structure that – whether it's a guardian, whether its brothers or when I say parent, I talk about people that take the role of looking after children, whether its parents or older sisters or brothers or grandparents or guardians, all of those, if they are aware, they're fired up, largely success will result then. Also it's motivation of the child as well to actually want to.

C: Do you think that the children would also, if they're able to develop a first language successfully, that they would also find it easier to develop English? How would their first language impact on their English?

J: Are you saying that the language is not English in which you become fluent and –

C: Well, if it's -

J: It's your mother tongue?

C: If it was, if it wasn't – if your mother tongue was Afrikaans or Xhosa?

J: I think it makes it more difficult, but I do think that if you have a gift for language, and certain people do, the hearing loss that you have, yes, it would be a hindrance but it wouldn't actually, it wouldn't stop the person from becoming fully comprehending in English if you're using English as a benchmark

C: Ja.

J: Because English is a very complicated language.

C: And when - I just was – I was really interested in the way that you have approached writing in – in your classroom. What are different approaches that you've used during the years to teach writing to your children?

J: Storytelling sometimes. Unfinished stories.

C: And then would they finish the stories for you or - ?

J: Well, sometimes, not necessarily in writing, more so in oral, but certainly as they become more advanced they want to know what, what, what happens and they want to be creators of their own theatre. So a story can be finished in many different ways depending on who the listener is. Ja, lots of little gimmicks of, you know, folding pieces of paper where people write a line - one line – and then you fold another piece of, you know, same paper, and somebody else writes a line and the subject is – you know, you start off with a benchmark and see what you get. And poetry. And rhyming words. And interesting, interesting, interesting examples of language which they wouldn't normally be confronted with.

C: Would – so would you expose them, expose them to that language in class and discuss it?

J: I would show them on the co- I would show them on the internet. I would show them on film. I would act it out. I get them to act out language. Interestingly enough, we were doing occupations recently and there was a - I looked at the, let's just say 12 examples I had, and in the end I thought to myself, "Gosh, these kids are going, especially [reference to child: omitted to protect child's identity] really battling to attach meaning to a word," and that's really what they have to try and find ways of doing, so I got the kids to start acting out different occupations, verbalizing it, gesturing, acting and in such a way [reference to child: omitted to protect child's identity] might not know the word in English but could do it in [the child's home language] and then I would back it up with the English word because it was an English lesson and we would learn to spell the word, learn to see the word, experience and feel the word where possible so that we could try to. I don't know if you could do it for everything; it's very difficult but certainly there are certain words that lend themselves to being. . . and often when I find for instance it's very difficult to explain - I've got two examples. One of them is the concept of a moment and I take my kids to the park. And you know when the - what is it – the - that you sit up and you go up and down? The …

C: Oh the seesaw?

J: The seesaw. You know how the seesaw touches the ground

C: Oh yes.

J: (clicks fingers) Just for that.

C: Oh yes.

J: That is my demonstration of what - how quick a moment can be.

C: Wow.

J: As an example of trying to find physical ways for conceptual images. Things like the word "silhouette"; trying to explain the feeling, I would have to show a picture. And then talk more about it, but ja, I try to find strange ways of communicating that don't depend too much, to start with, on heard language but certainly the heard language is what I want them to hear but I'm talking conceptually now and trying to get a concept through to make the language easier.

C: So that what I understand from all the different ways that you have been teaching writing is that you're developing in the children's minds the connotations of the word, understanding all those social and various aspects that are – that make up the word.

J: I think that's possibly a – a far-reaching and higher order goal. but certainly having fun with language and getting [them] to become aware of the fact that language can be used in the most detailed and incisive way to mean exactly something or it can be used in a way that is so vague that you can't actually figure out what the word is supposed to be meaning in that particular environment; so allow the confusion but also the clarity and it's good when the confusion comes because then we can talk about it and see if we can begin to focus on the confusion and make it less confusing.

C: How useful have you found drafting when teaching writing?

J: Very helpful because it allows absolute creativity. That's the goal, one of the major goals, not to worry too much about spelling and – and let's just say dialogue, speech, reported and – and once we've got the nitty gritty then we stop using so many exclamation marks and we try to keep, I try to focus on if I can see or feel a style. I allow that style to develop - sometimes there isn't any style at all and things are just a mishmash. Those are more difficult and you break them up into pieces; you start working on a few pieces only, not everything, One time it will just be: "Let's get the story going, and let's have fun while you tell it to us." Next time, we'll have, we'll break it up into paragraphs. By next time, we'll actually make sure that if two people are speaking, we don't have it on the same line, and the next time, we'll rather instead of using words like "frightened" and "scared," we'll think of other things like "horrified" and "absolutely anxious" so starting to have your connotation of a similar feeling but using interesting words to describe the same thing.

C: And when you, when you go over the drafts with them do you use more editing? Do you edit the draft and then they do a [unclear word]

J: Ja, the process is such that you write me a story; you show it to me while you're writing; you read it in pieces or you read as much as you've done; you don't read what you've already read; if you're still sort of like wanting to finish the story just ask questions about possibly where the story's going and whether it's too much, colloquial, from an interest point of view.

C: So you would ask the child those questions?

J: I would say "What are you-- where are you going with this?" And sometimes I'd get an answer. Sometimes "I don't know" would be the answer. But I- to answer your question properly, we can do as many as five or six or seven edits, and every time the child comes to read to me, and once the child has read to me, before I edit, I'll ask them to go and see if they can find anything to change, and then what I like them to do, once they've written it in pen/pencil I like them to put it onto the computer so that we can edit it on the computer so it takes less time because it's a very time-consuming exercise. It can take weeks to get one piece of work really that is of some worth without too many of the basic mistakes.

C: The way that I understand that you are kind of talking about this process of drafting is that it is a collaborative effort; that you help the child to see writing as a process. It involves some editing from you, also you also ask the child questions, drawing answers out of the child. Would that be a correct way of understanding?

J: I think more I try not to put any of my own ideas in, but what I do ask is, for instance, I'll ask a child what made them think of that particular tone of writing? How did they feel? What were they feeling when they wrote it, and why have they written it like this? I want answers from them. The more sure they become, the less information they want from me, but what they do want from me is, when I've heard something good, they want affirmation, and they want clarity, and they will argue if they don't agree with me. They will say, "No, I'm not going to take the story where you want it to go. I've actually, I've got a different idea about this." So I say, "Good, just make sure it's excellent and surprise me," and I get surprised.

C: How do you help them with the grammar of their pieces?

J: [I'm] quite strict with the grammar actually, unless of course we're using colloquial language and we're trying to create a character. I'm actually very strict with the grammar, very strict indeed.

C: Do you change in their text and send them to –

J: Sometimes I change it to help. Sometimes I circle it, and say, "Think of some - putting this is incorrect. Go and figure out why. Read it to yourself. Listen to it, and tell me if it sounds right to you."

C: Would you say that drafting, using drafting in writing, has been the most effective method or would you say that all of your different methods need to work together?

J: I think there is truth to both of those, but I find the drafting exercise the most fulfilling. Because we keep all our drafts behind, the most perfect one that we eventually end up with, and we look at where we've come from to what we've got, it's made a difference because when those particular children write again they're far less

likely to make similar mistakes and in actual fact the flow of their language has improved. They don't know it though, it just seems that way and it sounds that way.

C: Thank you very much. It's been wonderful. Thank you so much for your help. I really appreciate it.

J: You're so welcome. You've been gracious and kind.

Appendix D

English letter requesting permission from parents/guardians for their children to participate in the study.

Faculty of Arts
NMMU
Tel: +27 (0)41 504-2266
Fax: +27 (0)41504-2229
May 2008

Ref: H/08/A/ALS-001

Dear Parents/Guardians

I am a student studying for a master's degree at Nelson Mandela Metropolitan University and am interested in helping children with hearing loss to improve their written English. I would like to achieve two goals in my study:

1) To investigate how the written English of children with hearing loss differs from the written English of mainstream children without hearing loss
2) To make recommendations about the teaching of written English to children with hearing impairments.

The benefits of the research are that the results could be used to develop a greater understanding of the level of written English of children with hearing loss. The research recommendations could also help children with hearing loss to improve their writing skills.

Because I would like to compare the writing of children with hearing loss and the writing of children without hearing loss, I would like to gather some writing examples from both groups.

The reason for this letter is to ask if you would be prepared to allow your child's written assignments during class time to be part of this research. These assignments will not be different from any other writing assignment that the teacher would give the children as part of the normal school curriculum.

In order to analyse the children's writing accurately, I also need your permission to access the following information from the school records:

1) your child's academic record over several years for all subjects and his or her final average in each exam
2) Whether English is his or her first or second language
3) Your child's age
4) Your child's gender.

The reason for needing this information is simply to make sure that the children in the group with hearing loss and those in the group without hearing loss are as similar as possible as this is necessary for statistical analysis and to compare the performance in written English with performance in other school subjects.

If your child has a hearing loss, I also need your permission to access the following information from the school records:

1) the age at which your child developed a hearing loss (pre/post lingual loss)
2) the age at which the hearing loss stopped (if applicable)
3) the severity of the hearing loss

These factors may affect the language ability of learners with hearing loss.

Please note that the children's confidentiality will be protected in the research. In addition, the research will compare the two groups (children with and without hearing loss) and no results referring to individual children will be reported or revealed to third parties. Although your child's identity will at all times remain confidential, the results of the research study may be presented at scientific conferences or in specialist publications. Participation in the research is completely voluntary.

You have the right to qbery concerns regarding the study at any time. The telephone number of my supervisor is provided below. Please feel free to call this number. Furthermore, it is important that you know that the study has been approved by the Research Ethics Committee (Human) of the university. The REC-H consist of a group of independent experts that makes sure the rights and welfare of anyone taking part in research is protected and that studies are done in an ethical manner. Any queries can be directed to the Research Ethics Committee (Human). You can call the Director: Research Management at (041) 504-4536. Otherwise, you may write to: The Chairperson of the Research, Technology and Innovation Committee, PO Box 77000, Nelson Mandela Metropolitan University, Port Elizabeth, 6031.

Please complete and return the attached reply slip on or before 21 May 2008. If you have any questions you would like to ask before responding, please feel free to contact me.

Thank you for your time.

Yours sincerely

Carolyn Weir

RESEARCHER

Contact number: 041 504 2266 (this is the office number of Dr Diana Ayliff, my supervisor)

X----------

APPENDIX D

Appendix E

Afrikaans letter requesting permission from parents/guardians for their children to participate in the study and signed translator's declaration.

Fakulteit Letterheid en Wysbegeerte
NMMU
Tel: +27 (0)41 504-2266
Faks: +27 (0)41-504-2229
April 2008

Ref: H/08/A/ALS-001

Geagte Ouers/Voogde

Ek is 'n student wat besig is met my meestersgraadstudie by die Nelson Mandela Metropolitaanse Universiteit en ek stel daarin belang om kinders met gehoorverlies te help om hul geskrewe Engels te verbeter. Ek wil graag die volgende twee doelwitte bereik deur my studie:

1) Ek wil ondersoek hoe die geskrewe Engels van kinders mét gehoorverliese verskil van die geskrewe Engels van hoofstroom kinders sónder gehoorverlies.
2) Ek wil aanbevelings maak oor hoe geskrewe Engels vir kinders met gehoorverlies geleer kan word.

Die voordele van die navorsing is dat die uitslae gebruik kan word om 'n beter begrip te ontwikkel van die vlak van kinders met 'n gehoorverlies se geskrewe Engels. Die aanbevelings kan kinders met gehoorverlies ook help om hul skryfvaardighede te verbeter.

Omdat ek die geskrewe taal van kinders met gehoorverlies en die geskrewe taal van kinders sonder gehoorverlies wil vergelyk, wil ek graag voorbeelde van die skryfwerk van albei groepe versamel.

Die doel van hierdie brief is om u te vra of u bereid sou wees om toe te laat dat u kind se geskrewe opdragte wat tydens klastyd voltooi word deel kan wees van hierdie navorsing. Hierdie opdragte sal nie verskil van enige ander geskrewe opdrag wat die onderwyser/onderwyseres vir die kinders sou gee as deel van die normale skoolkurrikulum nie.

Om die kinders se geskrewe taal akkuraat te ontleed, het ek ook u toestemming nodig om toegang te hê tot die volgende inligting in die skool se rekords:

1) U kind se akademiese rekord van die afgelope paar jaar vir alle vakke, en sy of haar finale gemiddelde in elke eksamen.
2) Of Engels u kind se eerste of tweede taal is.
3) U kind se ouderdom
4) U kind se geslag.

Die rede waarom ek hierdie inligting benodig, is gewoon om seker te maak dat die kinders in die groep wat gehoorverlies het, so ver moontlik ooreenstem met die kinders wat nie gehoorverlies het nie. Dit word benodig vir statistiese ontleding asook om hul prestasie in geskrewe Engels te vergelyk met hul prestasie in ander skoolvakke.

As u kind gehoorverlies het, het ek ook u toestemming nodig om toegang te hê tot die volgende inligting in die skool se rekords:

1) die ouderdom waarop u kind gehoorverlies ontwikkel het
2) die ouderdom waarop die gehoorverlies opgehou het (indien van toepassing)
3) die graad van gehoorverlies.

Hierdie faktore kan die taalvermoëns van leerders met gehoorverlies affekteer.

Let asseblief daarop dat die kinders se vertroulikheid beskerm sal word. Verder sal die navorsing die twee groepe (kinders met en sonder gehoorverlies) vergelyk en geen uitslae wat verwys na individuele kinders sal gerapporteer word of bekend gemaak word aan derde partye nie. Alhoewel u kind se identiteit ten alle tye vertroulik sal wees, kan die uitslae van die navorsingstudie aangebied word by wetenskaplike konferensies of gepubliseer word in spesialis publikasies. Deelname aan die navorsing is geheel en al vrywillig.

U het die reg om ter enige tyd navraag te doen oor die studie. Die telefoonnommer van my studieleier word hieronder gegee. Neem gerus die vrymoedigheid om ons te kontak. Dit is belangrik dat u moet kennis neem dat hierdie studie deur die Research Ethics Committee (Human) (REC-H) van die universiteit goedgekeur is. Die REC-H bestaan uit 'n groep onafhanklike deskundiges wat seker maak dat die regte en welsyn van mense wat deelneem aan die navorsing beskerm word en dat studies op 'n etiese manier uitgevoer word. Vir enige navrae, kontak gerus die REC-H. U kan die Direkteur van Navorsingsbestuur kontak by (041) 504-4536. U kan ook na die volgende adres toe skryf: The Chairperson of the Research, Technology and Innovation Committee, PO Box 77000, Nelson Mandela Metropolitan University, Port Elizabeth, 6031.

Voltooi en stuur asseblief die antwoordstrokie hieronder terug op die 21ste Mei 2008. As u enige vrae het wat u graag wil vra voordat u die strokie invul, kontak my gerus.

Baie dankie vir u tyd.

Die uwe

Carolyn Weir
NAVORSER

Kontaknommer: 041 504 2266 (dit is die kantoornommer van dr. Diana Ayliff, my studieleier)
✂----------

APPENDIX E

C. DECLARATION BY TRANSLATOR (When applicable)

I,	Lana Bakkes
I.D. number	8003190087081
Qualifications and/or	MA Afrikaans & Dutch
Current employment	Project Manager, Struik Christian Books

confirm that I checked the contents of the attached letter which has been translated from English into Afrikaans

(name) Lana Bakkes

Signed/confirmed at Cape Town on 20 May 2008

I hereby declare that all information acquired by me for the purposes of this study will be kept confidential

Bakkes Signature or right thumb print of translator	Signature of witness Elsabé Barlow Full name of witness

Appendix F

Xhosa letter requesting permission from parents/guardians for their children to participate in the study and signed translator's declaration.

Isebe lomsebenzi wobugcisa
NMMU
Tel. +27 (0)41 504-2266
Fax: +27 (0)41-504-2229
uMeyi 2008

Ubhekiso: H/08/A/ALS-001

Bazali / Nabagcini babantwana

Ndingumfundi ofundela isidanga se-Masters e-Nelson Mandela Metropolitan Yunivesithi. Ndinomdla ekuncedeni abantwana abangevayo ukuphucula indlela ababhala ngayo isiNgesi.

Ndinenjongo ezimbini kolu phando lwam:

1) Ukuphanda ukuba isiNgesi esibhalwa ngabantwana abangevayo ngeendlebe okanye abanobuthulu sahluke njani kweso sibhalwa ngabo abahamba isikolo abangenayo ingxaki yokungeva.
2) Ukunika iingcebiso ngendlela amabafundiswe ngayo ukubhala isiNgesi abantwana abangevayo.

Ndinethemba lokuba iziphumo zolu phando ziya kuphucula ulwazi ngomgangatho wokubhala isiNgesi labantwana abangevayo, kwaye zincede ukuphucula indlela ababhala ngayo isiNgesi aba bantwana.

Kuba ndifuna ukuthelekisa indlela yokubhala yabantwana abangevayo kuleyo yabantwana abangenangxaki yokuva, kufuneka ndifumane imizekelo yokubhala kuwo omabini la maqela.

Injongo zolu bhalelwano kukuqonda ukuba ungavuma na ukuba ndijonge umsebenzi womntwana wakho wesikolo kolu phando. Akukho msebenzi wumbi ufunekayo ngaphandle kwalowo uqhelekileyo wesikolo awunikwa ngutitshala wakhe umntwana.

Ukuze ndiluqhube kakuhle olu phando, ndicela imvume yokufumana ezi ngxelo esikolweni:

1) ingxelo zenkqubo yomntwana kuzo zonke izifundo zakhe zeminyaka eliqela
2) ukuba wenza isiNgesi njengolwimi lokuqala okanye olwesibini
3) iminyaka yomntwana
4) isini somntwana

Isizathu sokufuna zonke ezi nkcukacha kukuqinisekisa ukuba abantwana abakwiqela labo bangevayo bayafana nabo bakwiqela labo bangenangxaki yokuva ukuze lwenzeke kakuhle ucwaningo, nokuthelekisa indlela yokubhala isiNgesi nendlela abaqhuba ngayo abantwana kwezinye izifundo.

Ukuba umntwana wakho unengxaki yokuva, ndicela imvume yokufumana ezi ngxelo esikolweni:

1) Uqale nini umntwana ukuba nengxaki yokuva?
2) Uyeke nini umntwana ukuba nengxaki yokuva?
3) Ubungakanani bengxaki yokungeva

Ezi zinto zinenxaxheba ekufundeni kolwimi kumntwana onengxaki yokuva.

Qonda ukuba amagama abantwana abakolu phando awayikwaziswa kwabanye abantu. Kwaye, olu phando luza kuthelekisa iqela labantwana abanengxaki yokuva nabo bangenayo le ngxaki, kodwa akukho zingxelo zomntwana ngamnye eziya kuxelelwa abanye abantu. Iingxelo zolu phando kusenokuthethwa ngazo ezintlanganisweni zoososayentsi okanye kubhalwe ngazo ezincwadini zabo. Awunyanzelekanga ukuba uvume ukuthatha inxaxheba kolu phando.

Unalo ilungelo lokubuza izinto ongaziqondiyo ngolu phando nanini na. Inombolo zomqeqeshi wam zibhaliwe apha ngezantsi. Ungaqhangamshelana naye nanini na. Kwaye olu phando luvunyiwe yi-Research Ethics Committee (yabantu) yalapha eyunivesithi. Le komiti inamalungu aqinisekisa ukuba amalungelo abantu abathatha inxaxheba nakuluphi na uphando ayahoywa. Xa unombuzo ungaqhangamshelana nayo le komiti kule nombolo – (041) 504-4536. Okanye usenokubhalela u: The Chairperson of the Research, Technology and Innovation Committee, P.O. Box 77000, Nelson Mandela Metropolitan University, Port Elizabeth 6031.

Ndicela ugcwalise kwaye uthumele le mpendulo phambi kwalo mhla 21 May 2008. Ukuba unemibuzo phambi kokuphendula, nceda uqhangamshelane nam.

Ndiyabulela ngexesha lakho.

Ozithobileyo

Carolyn Weir

UMPHANDI

Inombolo: Ukuba ufuna ukuthetha nam dayela 041 504 2266 (inombolo e-ofisini ka Dr Diana Ayliff, umveleli wam)

X----------

APPENDIX F

C. DECLARATION BY TRANSLATOR (When applicable)

I,	Prof. B. B. MKONTO
I.D. number	5007265637082
Qualifications and/or	D Litt et Phil
Current employment	Professor : NMMU

confirm that I checked the contents of the attached letter which has been translated from English into Xhosa

(name)

Signed/confirmed at Port Elizabeth on 5 MAY 2008

I hereby declare that all information acquired by me for the purposes of this study will be kept confidential

Signature or right thumb print of translator	Signature of witness
	LINDA LORETTA KWATSHA Full name of witness

Appendix G

Permission to conduct the study from the Department of Education

APPENDIX G

Province of the
EASTERN CAPE
DEPARTMENT OF EDUCATION

Ethel Valentine Building * Sutton Road * Sidwell * Private Bag X3931 * North End * Port Elizabeth * 6056 *
REPUBLIC OF SOUTH AFRICA * Tel: 0414034420 * Fax: 0414510193 *
Website: ecprov.gov.za * e-mail: tandeka.mbopa@edu.ecprov.gov.za

Ms C. Weir
3 Weybridge Drive
Port Elizabeth
6070
(Fax: 041 3601632)

Dear Ms Weir

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT PORT ELIZABETH SCHOOLS

I refer to your undated letter and received on 22 August 2008.

Permission is hereby granted for you to conduct your research on the following conditions:

1. your research must be conducted on a voluntary basis;
2. all ethical issues relating to research must be honoured;
3. your research is subject to the internal rules of the school, including its curricular programme and its code of conduct and must not interfere in the day-to-day routine of the school.

Kindly present a copy of this letter to the principal as proof of permission.

I wish you good luck in your research.

Yours faithfully

L.M.T. MBOPA
ACTING DISTRICT DIRECTOR: PORT ELIZABETH
/ab

25 August 2008

Appendix H

Three essays of a deaf child

Writing a narrative: Write a story with the title "Lost for 20 days on an island: how I survived." Remember that every story has a beginning, a middle and the end.

Day 1 arrived to the island now I am build a hut and I am fishing now it is late at night it is time to make a fire than I put the fish on the fire.
Day 2 wake up in the morning hale a swim make a fire and go bushes peek fruit and go back to hut more wood on the fire then go sea to fish it is lunch time I put the fish on the fire then go back to the sea to fish then I go back to my hut put more wood now it is time to eat then I go to sleep then in the middle of the night the monkey is eating the fish.
Day 3 wake up in the morning have a swim make a fire and go to the bushes peek a fruit and go back to the hut put more wood on the fire then go back to my hut put more wood now it is time to eat then I go to sleep then in the middle of the night the the monkeys is eating the fish.

Day 4 wake up in the morning have a swim make a fire and go the sea to fish and go the bushes peek a fruit and go to get more wood and put on the fire

Appendix H

Writing a narrative: Write a story with the title "The day I found hidden treasure."

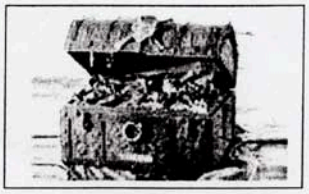
Remember that every story has a beginning, a middle and the end.

when I found hidden treasure I was so happy then I take a treasure it is to big so it is shinning like gold. and shiver.

when I went to see it is shinning like a sun we did go to the boat and we went to the island then got their more gold and shiver then I ran away on the boat off we go home we came home we went party time.

when I found hidden treasure it was to much then I came home with a treasure.

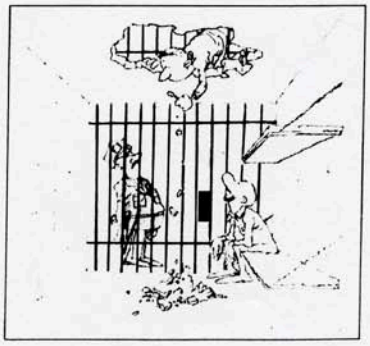
The End



Writing a narrative: Write a story with the titled "The Great Escape" about a prisoner escaping. You can decide where the prisoner was escaping from. Remember that every story has a beginning, a middle and the end.

Once upon a time!

The prisoner escaping from prison then he broke in to people houses then Mr [Name 1 omitted for confidentiality reasons] the polies man he shoed up in the people houses he said whats wrong some body broke in my house who [Name 2 omitted for confidentiality reasons] who is [Name 2 omitted for confidentiality reasons] my son your son were is he lives in 9273 central street bye he drove to [Name 2 omitted for confidentiality reasons] houses. [Name 2 omitted for confidentiality reasons] open up now who is it Mr [Name 1 omitted for confidentiality reasons] the polies man open up no no no open up ok who is it again Mr [Name 1 omitted for confidentiality reasons] the polies man ok I will open up now but he ask the polies man s



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Appendix I

Three essays of a hearing child

Writing a narrative: Write a story with the title "Lost for 20 days on an island: how I survived." Remember that every story has a beginning, a middle and the end.

Once upon time Devron, Sydeny, Yaseen and Joshau our boat sank we managed to swim to an island we were cold and hungry we saw no fruit we started to cry alittle we wondered into the trees finally we found fruit trees with apples, grapes, bananas, berries, cherries and more it was delishis we got fool of eating we needed water but couldnt find it for hours tryin to send signs for help nobody could think of anything we were losing it everyone was scared It was getting darker and colder we had no shelter so we thought we puled our selves together we worked with each other.

The first 10 nights were fine then we saw a big black snake we coulz it killed it and ate it was tasty but disgusting 9 days and nights went past.

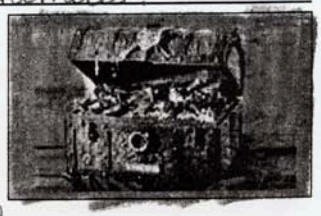
On the 20th day a ship came past we called and called the ship tarned we all were save and saved.

Writing a narrative: Write a story with the title "The day I found hidden treasure."

Remember that every story has a beginning, a middle and the end.

One fine moring I got out of bed brushed my teeth and showered went down stairs ate breakfast then I got news we going on a cruose I got to the ship got on board and we were saling until the ship hit a large rock the ship sank like titanic lucky no one died we swam to a island we were hungry and climbed a tree to pick some bananas it was geting colder and colder we talk large leaves to cover us like a blanket it was still cold next morring we got to work building a boat. Then I was digging a big hole and then I hit a hard thing and I puled it out I opened it I found alot of gold, silver, bronez and platoim I was rich.

We build a big boat it was ready to sale I talk the treasure chest with we saw alot of sea animals.



We made it back on Monday and we were gone on Friday we were safe a I am rich.

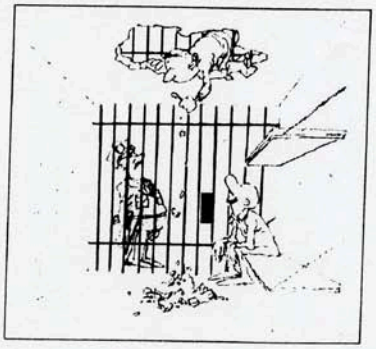
The End

APPENDIX I

Writing a narrative: Write a story with the titled "The Great Escape" about a prisoner escaping. You can decide where the prisoner was escaping from. Remember that every story has a beginning, a middle and the end.

One morning I over slep someone knocked on the door I opened the police locked me up for what I plan to escape out I dug a hole in the wooden floor I jumped in got ran away got me again. They beat me up I fort back and ran away sirounded me I serended locked me up 20 years in I planed aner escape a better one hit a hole in the wall snuck in in the sever this place tinks like rubble.

I brought myself new clothes went to my house but I had no key I broke a window I broke in my own house I made me four slices of sandwitches I wasnt foul I was still hungry my face was all over the 08:00 Oclock news I brought a car with the money I was saving 20 years drive out of town never to be seen again got marride 3 children 2 girls 1 boy had a happy live but now they who stole and murdered that poor lady. The End.



Appendix J

Three illustrations of how analysis of essays was done

Key:

<T> = T-unit

<EFT> = Error-free T-unit

= Errors

Spelling and punctuation errors were excluded from the analysis

Three illustrations of analysis: one hearing child and two deaf children

Illustration 1: Hearing child

In[1] my birthday party I want to have a good day, so that I can do the things I would want to do. <T> In[2] my party I would invite my friends because it's fun when the's [there's][3] my friends in[4] my birthday party. <T>

I would like to go swimming with my friends if it is hot. <T> <EFT>

Illustration 2: Deaf child

If it was my birth day, I would like to have lots of present[5] <T> and I would like to go at[6] Bayworld and go to KFC. <T>

Illustration 3: Deaf child

I have lot[7] of friends. <T> My cake is big. <T> <EFT> I have present.[8] <T> I play with my friends. <T> <EFT>

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[1] Incorrect preposition
[2] Incorrect preposition
[3] Concord error
[4] Incorrect preposition
[5] Plural needed
[6] Incorrect preposition
[7] Missing indefinite article before "lot"
[8] Plural needed