

**Investigating the course of L1 SASL development  
and L2 Afrikaans reading development  
in young deaf children  
following a newly introduced curriculum  
with SASL as both LoLT and school subject**

**Minna A. Steyn**



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Supervisor: Dr Frenette Southwood  
Co-supervisor: Dr Marcellyn Oostendorp

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## **Declaration**

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Date: December 2015

## Abstract

Reading skills of Deaf schoolchildren in the United States of America are reported to be significantly below those of their hearing peers. In South Africa, Deaf learners' prospects of attaining high levels of literacy are even bleaker. This fact gave rise to the current study, which examines the impact of a newly introduced Curriculum Assessment Policy Statements (CAPS) curriculum with South African Sign Language (SASL) both as a school subject and as language of learning and teaching on (i) the course of language development in SASL and (ii) early reading development in second language (L2) Afrikaans amongst young Deaf learners.

The expressive language (SASL) of four participants with various home language backgrounds (some with signing, Deaf parents; others with hearing, non-signing Afrikaans- or English-speaking parents) was regularly video-recorded over a period of three years, from the beginning of their pre-Grade R (i.e., Grade 0) year until the end of their Grade 1 year. These learners all started reading at the beginning of Grade 1, but were exposed to SASL for varying periods prior to that. The language development (in terms of handshape and discourse skills) and literacy development (reading comprehension) of the participants were qualitatively analysed based on the recordings.

Despite the diverse circumstances of the four participants in terms of date of diagnosis, length of exposure to SASL and age of first exposure, parental mastery of SASL, and length of attendance of the school in which the SASL curriculum was piloted, they all showed notable progress in terms of SASL acquisition over the course of the study period, and they all managed to acquire reading skills up to the level expected of a Grade 1 learner. As was found for hearing users of a spoken language, language competence appears to be a prerequisite for the development of literacy skills in Deaf children (see Adams 1990; Gathercole and Baddeley 1993). The assumption is that the four children studied here were successful readers in their L2 (despite Deaf children usually finding the acquisition of reading skills very challenging) because they had sufficiently developed first language (SASL) skills as a foundation for literacy acquisition. The participants' phonological, morphological, syntactic, semantic and pragmatic knowledge of SASL appeared to have "come together" by the time they reached Grade 1, although these were not necessarily taught explicitly. This, again, enabled the acquisition of grade-appropriate reading skills in the L2.

The findings of this study indicate the potential benefit of early intervention for Deaf children and that the SASL CAPS curriculum ought to be introduced at the time of enrolment in a school for the Deaf (i.e. from age three years onwards), and not only in Grade R.

## Opsomming

Leesvaardighede van dowe skoolkinders in die Verenigde State van Amerika is na berigte beduidend laer as dié van hul horende eweknieë. In Suid-Afrika is dowe leerders se kans om hoë geletterdheidsvlakke te bereik selfs skraler. Hierdie feit het aanleiding gegee tot die huidige studie, wat die impak ondersoek van 'n nuut-bekendgestelde Kurrikulum-assesseringsbeleidstellings- (KABS) kurrikulum met Suid-Afrikaanse Gebaretaal (SAGT) as beide skoolvak en taal van leer en onderrig op (i) die verloop van taalontwikkeling in SAGT en (ii) vroeë leesontwikkeling in tweedetaal- (T2) Afrikaans onder jong Dowe leerders.

Daar is gereeld oor die verloop van drie jaar video-opnames gemaak van die ekspressiewe taal (SAGT) van vier deelnemers met diverse huistaalagtergronde (sommige met Dowe gebaretaalgebruikers as ouers; andere met horende Afrikaans- of Engelssprekende ouers wat geen gebaretaal ken nie), van die begin van hul pre-Graad R- (i.e., Graad 0-) jaar tot die einde van hul Graad 1-jaar. Hierdie leerders het almal begin lees aan die begin van Graad 1, maar is voor dit vir verskillende periodes aan SAGT blootgestel. Hul taalontwikkeling (in terme van handvorm en diskoersvaardighede) en geletterdheidsontwikkeling (leesbegrip) is aan die hand van die opnames kwalitatief geanaliseer.

Ondanks die diverse omstandighede van die vier deelnemers in terme van diagnosedatum, lengte van blootstelling aan SAGT en ouderdom van eerste blootstelling, ouers se bemeestering van SAGT, en lengte van bywoning van die skool waarin die SAGT-kurrikulum geloods is, het hulle almal noemenswaardige vordering getoon in terme van SAGT-verwerwing oor die verloop van die studietydperk, en het hulle almal daarin geslaag om leesvaardighede te verwerf tot op die vlak wat van 'n Graad 1-leerder verwag word. Soos gevind is in die geval van horende gebruikers van 'n gesproke taal, blyk taalkompetensie 'n voorvereiste te wees vir die ontwikkeling van geletterdheidsvaardighede in dowe kinders (kyk Adams 1990; Gathercole en Baddeley 1993). Die aanname is dat die vier bestudeerde kinders suksesvolle leerders in hul T2 was (ondanks die feit dat die verwerwing van leesvaardighede gewoonlik vir dowe kinders 'n groot uitdaging is) omdat hulle eerstetaalvaardighede (in SAGT) voldoende ontwikkel was om as fondament vir geletterdheidsverwerwing te dien. Die deelnemers se fonologiese, morfologiese, sintaktiese, semantiese en pragmatiese kennis van SAGT blyk "byeen te gekom het" teen die tyd wat hulle Graad 1 bereik het, alhoewel daar nie noodwendig eksplisiete onderrig hieroor gegee is nie. en dit het die verwerwing van graadtoepaslike leesvaardighede moontlik gemaak.

Die bevindinge dui die belang van vroeë intervensie vir die Dowe kind aan. Die bevindinge ondersteun ook die seining dat die SAGT KABS-kurrikulum vanaf toetrede tot 'n skool vir Doves gevolg behoort te word (d.i. vanaf ouderdom drie jaar), en nie eers vanaf Graad R nie.

## Transcription conventions used to gloss SASL

SYMBOL	EXAMPLE	EXPLANATION
WORD	Sign	An English word in capital letters stands for an SASL sign. Such a word is called a <b>gloss</b> . The gloss and the English word may not be exactly the same in all cases.
<i>fs-</i>	<i>fs</i> -B-O-N-G-I	“fs” is the abbreviation for a <b>fingerspelled</b> word.
-	clothes-put-on	When the words for sign glosses are separated by a hyphen, they represent a single sign.
++	work++	The plus signs after a word indicate repetition(s) of the sign (as in the example). The symbol is also used for habitual or frequentative inflection.
++	ball++	The plus signs after a word also indicate the plural form of the noun – in this case, <i>balls</i> .
( <i>facial name</i> )	A name that is given to a person by a Deaf person, usually indicated on the face.	<i>Facial name</i> in italics and brackets is used for the sign representing the person where no name has been fingerspelled.
<u>Y/N question</u>	<u>Y/N question</u> YOU FOOT CUT	A yes/no question is a question to which one expects (only) “yes” or “no” as an answer.
<u>Wh-question</u>	<u>Wh-question</u> YOUR NAME WHAT	A wh-question is a question in which the question word is a wh-element ( <i>who, what, where, when, why, how</i> or <i>which</i> ).
<u>Rhet- question</u>	<u>Rhet- question</u> ME TIRED WHY... STUDY ALL-NIGHT	A rhetorical question is a question to which the person who asks the question does not expect an answer (and in many cases answers the question him/herself).
<u>neg.</u>	<u>neg.</u> HURT NOT	Negative and yes/no markers used at the same time.
<u>nod (aff)</u>	<u>nod (aff)</u> ME WORK GOOD	Positive head nod, stressing assertion or affirmation.
<u>headshake (neg)</u>	<u>headshake (neg)</u> ME WORK NO	Negative headshake accompanied by the sign for “no”.
<u>puff cheeks</u>	<u>puff cheeks</u> FOOT MINE SWOLLEN	<i>Puff cheeks</i> indicates that the cheeks were puffed up in order to indicate a puffy entity or a great quantity or something happening extensively.
<u>protruding lips</u>	<u>protruding lips</u> FIRE DANGEROUS	Lips protruding and breath being blown out indicate intensity, in this case that the fire is not only merely dangerous but very dangerous.
<u>Gaze (lf, rt down or up)</u>	<u>gaze (lf)</u> GIRL MOTHER LOOK-AT	Gaze helps to set the scene. In the example, it is obvious that the mother is at the girl’s left, because of her gazing in that direction when looking at the girl.
<u>dir. verb (lf, rt, towards signer, etc)</u>	<u>dir. verb(towards signer)</u> MAN HELP-ME	<i>Dir. verb</i> is used to indicate the direction in which the sign is made and thus the direction in which the action is being performed– in the example, to create a clear meaning of who is helping whom.

<u><i>r-shift</i></u>	<u><i>r-shift</i></u> WOLF BLOW <sub>++</sub>	Role shifting is used when the signer takes on the role of the person/entity about whom s/he is signing – for example, in the example, the signer “becomes” the wolf.
<u>...-CL</u>	<u>V-CL</u> LOOK <sub>++</sub>	Classifiers are productive signs that are often used to represent nouns. They can indicate plurals and how a person/object moves. There is not just one classifier for a given noun. In the case of LOOK <sub>++</sub> , the V-hand is used repetitively in 3 different locations.
<u>(2h)...-CL</u>	<u>(2h) 4-CL</u> CHILDREN LINE-UP	(2h) indicates that both hands are being used to produce the classifier. In the example, both hands are being used to represent children lining up. The weak hand (4-Hand) is stagnant and the dominant hand (4-Hand) is being moved in the direction in which the children are queuing.
<u>...-CL(sweeping)</u>	<u>V-CL(sweeping)</u> BEN CROWD LOOK-AT	(sweeping) indicates that the movement indicated by the classifier is one sweeping movement.
<p>Note that classifiers are not indicated per classifier class, e.g., Descriptive classifiers (DCL), Locative classifiers (LCL), Semantic classifiers (SCL), Body classifiers (BCL), Instrument classifiers (ICL), Body part classifiers (BPCL), Plural classifiers (PCL) and Element Classifiers (ECL). Classifiers are only recorded per handshape used to indicate the classifier.</p>		

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# Chapter 1

## Introduction

### 1.1 Background to and rationale for the study

The reading skills of Deaf schoolchildren in the United States of America (USA) are reported to be significantly below those of their hearing peers. The average reading comprehension score of Deaf school leavers is at a level comparable to that of third- or fourth-grade hearing children (Allen 1986; Karchmer and Mitchell 2003; Traxler 2000). Deaf learners thus leave school with a median reading age of 9 years (Conrad 1979). Steward and Clarke (2003) report that the first educational survey in the USA, that by Pitner and Patterson in 1916, found 14- to 15-year-old Deaf children to have an average reading age of 7 years. That picture has not changed significantly in the USA over the past century despite the adoption of various methods and techniques that their proponents claimed would provide sufficient support for Deaf children to develop literacy skills.

In South Africa, Deaf learners' prospects of attaining high levels of literacy are even bleaker. The Deaf Federation of South Africa (DEAFSA 2003: 8) states that "Deaf learners who have been through the education and training system for 12-15 years can still not read or write a spoken language properly". As is the case in the USA, the majority of Deaf South African learners leave school with the reading and writing ability of a 9-year-old (DEAFSA 2003: 8). Two considerations led to a school curriculum being developed for South African Sign Language (SASL) as school subject, namely (i) the above-mentioned poor reading skills of Deaf learners at the point where they exit the school system and (ii) an awareness of the importance of early exposure to a natural language in an optimal environment – which is necessary for first language (L1) acquisition, which forms the foundation for reading development in the second language (L2). This curriculum would increase Deaf learners' chances of obtaining improved literacy skills and of completing their schooling up to Grade 12.<sup>1</sup>

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<sup>1</sup> Few of the small number of Deaf South African learners who had reach Grade 12 level qualified for matriculation exemption, because they did not have a so-called "second official language

The curriculum was developed for the purpose of teaching SASL as subject at school level, thus creating a L1 foundation for Deaf learners on which the teaching of a language of literacy (their L2) could be based. The mentioned curriculum was developed by a Free State Task Team (of which I was a member) for Grade R to Grade 9 and was later expanded for the Western Cape Province.

In South African schools for the Deaf, competency of hearing teachers in using SASL for teaching purposes proves to be generally low. The majority of hearing teachers resort to Total Communication or to Signed Exact English (SEE) or Signed Exact Afrikaans (SEA) (discussed in section 1.6). Learners are very seldom exposed to grammatical SASL during their school careers. This phenomenon is not limited to South Africa; it also occurs in the USA and Britain where the vast majority of teachers for the Deaf sign using spoken English word order, i.e., use Signed English (Jordan and Karchmer 1986). Signed English differs vastly from American Sign Language (ASL) or British Sign Language and also from SASL. These sign languages are not based on or derived from English. Signed English, by contrast, is not a separate language but rather a manual code for English, as it attempts to manually represent spoken English. This code uses signs in a sentence in the same way in which words are used in English, and do not consider how signs are used in ASL (or any other sign language). Some examples of this type of code system are Seeing Essential English (Anthony 1974), Linguistics of Visual English (Wampler 1972) and Signed English (Bornstein 1973). All are designed for use by hearing teachers and hearing parents of Deaf children, and all are systems rather than natural languages.

The South African Schools Act (South African Schools Act 1996 [No. 84 of 1996] Chapter 2, No 6(4)) makes provision for SASL to be used as a language of learning and teaching (LoLT) (see Article 6: Language policy for public schools: (4) *a recognized Sign Language has the status of*

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subject qualification". This is because, up until recently, it was not possible for them to study their L1 (SASL) as Home Language at school. They thus studied a spoken language as Home Language (e.g. English, which is the L2 of some Deaf South Africans) and then had to study their third language (also always a spoken language, e.g. Afrikaans) as First Additional Language. Hearing learners could thus study their L1 as Home Language and their L2 as First Additional Language, whereas Deaf learners had to study their L2 as Home Language and their third language as First Additional Language, which placed them at a disadvantage compared to hearing learners.

*an official language for purposes of learning and teaching*) but not as a subject. However, after the country had been sensitised by the court case involving Kyle Springate, a KZN learner who took the Ministry of Education to court for not being able to do SASL as a matric subject (Beeld 2009/06/12), the Western Cape Education Department invited the above-mentioned Free State Task Team to co-operate with them in completing the said curriculum up to Grade 12 level (thus adding three more years of study). This completed curriculum was piloted by the Western Cape Education Department at De La Bat School for the Deaf in Worcester,<sup>2</sup> where it served to teach SASL as a subject on Home Language Level, the focus being the Foundation Phase. The piloting and testing of the curriculum lead to SASL forming the basis for the bilingual-bicultural approach to teaching Deaf children (see section 1.6). I was the manager of the SASL curriculum pilot project, and in this thesis, I report on some of the results of this project, specifically those pertaining to the reading skills of Deaf beginner readers.

Note that by the time Deaf children are exposed to literacy for the first time, they have not necessarily had the same length of exposure to their L1 (a sign language) as hearing children have had to their (spoken) L1. This is frequently due to a late diagnosis of hearing impairment in children, late referral to centers where there is exposure to sign language, and/or parents delaying exposure to sign language due to a fear that their children will never use spoken language if they learn to sign. (For Deaf children born to Deaf parents and/or into signing households, this obviously does not hold.) The results of the Goldin-Meadow and Mayberry (2001) comparative study between Deaf children of Deaf parents and Deaf children of hearing parents confirm that robust L1 language skills are the key to learning to read, and that children need language on which to map the printed code.

On the innateness view of language acquisition, human beings are born with the ability to acquire such L1 skills, and such acquisition will take place provided that the child is exposed to another person who has already acquired the language in question (Lemetyinen 2012). In this regard, Chomsky (1955/1975: 95) states that “children are biologically programmed for language and language develops in the child in just the same way that other biological functions develop”. The

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<sup>2</sup> Because of the success of the pilot study, the roll-out of the SASL as Home Language curriculum rapidly occurred in all Western Cape Education Department schools for the Deaf using SASL as a language of learning and teaching.

child has an innate ability to understand and acquire grammatical rules (syntax and morphology); upon exposure to a spoken language, hearing children also acquire the vocabulary items and the phonological system of that language, whereas children (hearing and Deaf) acquire the vocabulary and handshapes of a sign language upon exposure to it. On the critical period hypothesis of Lenneberg (1967), there is a window period during which the brain is particularly receptive to the acquisition of any natural language. After this period, language acquisition is difficult and incomplete. Mashie (1997: 1) states that the practise of hearing parents to withhold sign language input from their Deaf child “has a pervasive effect on practices in raising deaf children”. The child’s limited access to the spoken signal can lead to almost no early language acquisition taking place, and the sign language competence that they do acquire when they are later exposed to a sign language will decrease as the age of initial exposure increases (see Hyltenstam 1992; Newport and Supalla 1987). In this regard, Cummins (1984: 100-104) states that the lack of early L1 competence has been shown to hamper the acquisition of any language thereafter and results in the children progressing through their education only “semi-lingual”. Delayed acquisition of a L1 thus has serious consequences (Mayberry 1993; Newport 1990; Johnson and Newport 1991), and both quantity and quality of early linguistic experiences are important in language development. By 4 to 5 years of age, children who have had access to language input have acquired the core grammatical structure of the language to which they were exposed (see Brueggemann 2004: 93). The absence of linguistic input during the first years of some deaf children’s lives leads to their language acquisition ability then not being activated.

Vygotsky (1962: 121) refers to “the zone of proximal development”, which is the distance between what a learner can do independently (without input or assistance) and what a learner cannot yet do, thus referring to the stage during which a child can perform a certain task with input or assistance from an adult or a more mature child. In terms of the Deaf child using a sign language, this would mean that the infant cannot move to the next stage of language development except through him/her being communicated to by an adult. It is the adult’s language input, internalised by the child, which allows the child to move from sensation to “sense”, from a perceptual world into a conceptual world. A hearing parent acting as their child’s main source of language input without being a competent user of sign language is detrimental to language development of the Deaf child. Given that many Deaf children do receive late exposure to an

accessible language and thus do not necessarily have the same level of L1 skills as most hearing children of their age, there is not necessarily a firm L1 foundation on which literacy skills can be built in Deaf learners. For this reason, I consider in this thesis not only the participants' reading development but also their acquisition of sign language as their L1.

## 1.2 Research questions

Against the background given in the previous section, the following two research questions were posed:

- What is the course of language development in SASL as L1 in young Deaf children following a newly introduced curriculum with SASL as both LoLT and school subject?
- What is the course of early reading development in L2<sup>3</sup> Afrikaans in young Deaf SASL users following a newly introduced curriculum with SASL as both LoLT and school subject?

## 1.3 Study design

The study makes use of a multiple case study design. Yin (1984:23) defines this research design as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context ... in which multiple sources of evidence are used”. Despite the disadvantages of this design – such as the limited generalisability of the results due to the small number of participants (McLeod, 2008) – this design was deemed appropriate for use in this study, because it would allow one to answer the research questions succinctly. In the case of this study, this research design enabled one to include cases that represent the diversity present in the South African Deaf community: The four participants were diverse in terms of language background (as stated below also) but also in terms of other factors: One male child of Deaf signing parents had lengthy exposure to SASL from native users of the language and wore hearing aids; the other male participant, the son of a hearing father and a hard-of-hearing mother, had a cochlear implant which he did not use at the time of the study and which since implantation was mostly without

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<sup>3</sup> Note that Deaf sign language users necessarily learn to read in their L2, as sign languages do not have orthographies and are not written codes.



the speech processor. He was not exposed to sign language at home, and his social circumstances were also not conducive to good language or emotional development. One female participant, the child of hearing parents, had severe behavioral problems – to such an extent that she was initially misdiagnosed with autism. At the time of the study, she still exhibited atypical social behavior. The other female participant, the only child of very supportive hearing parents, received a cochlear implant at a later age (which she is now unwilling to use). A multiple case study design made it possible to examine every case individually and to look for possible explanations for the findings on the language and reading abilities of each child. The fact that case studies generate detailed (i.e., rich qualitative) information (McLeod, 2008) is one of the reasons why such detailed examination is possible. Another benefit of using case studies is that the research is conducted in context (Yin, 1984), in other words one studies behavior in the actual situation in which the behavior typically takes place. In addition to a case study design generating data in a real-life environment, it also assists one in explaining the complexities of real-life situations. Such complexities are not necessarily made apparent when studying phenomena such as language and literacy acquisition in experimental contexts or by survey research.

In the four case studies, the expressive language (SASL) of four participants with various home language backgrounds (some with signing, Deaf parents; others with hearing, non-signing Afrikaans-speaking parents) was regularly video-recorded over a period of three years, from the beginning of their pre-Grade R (i.e., Grade 0) year until the end of their Grade 1 year. These learners all started reading at the beginning of Grade 1, but were exposed to SASL for varying periods prior to that. In this thesis, I analyze the language and literacy development of these four participants as shown in the recordings.

As stated above, two of the four participants received cochlear implants but not one of the two was making use to their implants at the time of the study. The boy had had intermittent access to a speech processor before enrolment in De la Bat school and had not been using a processor at all since his enrolment in the school, and the girl continuously switched her processor off since receiving it shortly after implantation. These children thus had cochlear implants, but their language development received no opportunity to benefit from the implants. As such, I do not discuss in this thesis the language and literacy development of deaf children with cochlear

implants. Much literature is however available on this topic, as cochlear implantation has become the norm for deaf children in developed countries, where at least 80% of deaf children receive cochlear implants (Brentari, 2010; no statistics for South Africa could be sourced – see also Storbeck and Moodley, 2011), and the language development of deaf children with cochlear implants has thus been researched intensely. This research indicates varying success rates for these children in terms of language development (see, for instance, Fink, Wang, Visaya, Niparko, Quittner, Eisenberg and the CDACI Investigative Team, 2007; Peterson, Pisoni and Miyamoto, 2010), with some implanted children exposed to spoken language only not communicating at age level even after years of exposure to spoken language and rehabilitative training (see, for instance, Geers, 2006; Thoutenhoofd, Archbold, Gregory, Lutman, Nikolopoulos and Sach, 2005; Yoshinaga-Itano, 2006).

#### **1.4 An overview of the grammar and the linguistics of sign languages**

Because an awareness of the differences between SASL (the L1 of the participants in this study) and Afrikaans or English (the participants' L2 and the language to become their third language, respectively) is pertinent in this study, I provide a brief overview here of the linguistic aspects of sign languages. Historical records from both Western and Middle Eastern cultures indicate that Deaf people and Deaf communities who used sign language have existed for at least 7000 years (Schick and Spencer 2006). Deaf people are mentioned even in early recorded history, including in Babylonian records, the Mosaic Code of Holiness from the sixth century B.C. and both the Old and New Testaments of the Bible. The recognition of sign languages may be traced back to the work of Plato in Ancient Greece. In *Crytylus* (written 360 BC), Plato wrote that if we had no voice or tongue, “should we not, like the deaf and dumb,<sup>4</sup> make signs with the hand and head and the rest of the body?” (Johnston and Schembri 2007: 21). Despite the length of time that sign languages have been in use, attempts to understand the structure of sign languages as linguistic systems are just over 40 years old. Cokely and Baker-Shenk (1980) state that because research on the linguistics of sign languages started so recently, it is important to stay abreast of new research

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<sup>4</sup> The term “deaf and dumb” is an archaic term that is considered offensive and is nowadays mostly used in a derogatory sense. The term appears here as part of a direct quotation and does not reflect the author's view on deaf/Deaf persons.

in this field and to accommodate it. Recent works on the grammar of sign languages include *Linguistics of American Sign Language* by Valli, Lucas, Mulrooney and Villanueva (2011). In their book, Valli et al. remark that no one can really understand the structure of ASL without first knowing its basic components (and this statement can be generalised to other sign languages). Grammars for other sign languages include *Australian Sign Language – An introduction to sign language linguistics*, in which Trevor Johnston and Adam Schembri (2007) provide a comprehensive introduction to the linguistics of Australian Sign Language (Auslan). They explore each key aspect of its structure, providing an accessible overview of its grammar, phonology, morphology, lexicon and semantics. Akach, Aarons, and Matabane (2007a, b) provide an overview of SASL. It is from these sources that the exposition of the features of SASL presented below is drawn.

#### **1.4.1 Phonology**

Until the 1960s, sign language was thought to be a primitive communication system that lacked extensive vocabulary and the means to express subtle or abstract concepts. It was not viewed as a “real” language with a grammar and a lexicon. Rather, it was seen as a collection of gestures or pantomime. This viewpoint was preventing sign language from gaining respect and from being used in the education of Deaf children.

In 1957, Stokoe and two assistants (Carl Croneberg and Dorothy Casterline) began to film Deaf people signing. Studying the filmed sign language, Stokoe and his team identified in the sign language the elements of a real language being used. The results of their research were published in 1960 in a research monograph, *Sign Language Structure*. Stokoe realised that signs can be analyzed in the same way in which the units of spoken language can be analyzed. He found that signs are not gestures; they are not holistic icons. Instead, Stokoe (1960) showed that they are comprised of a finite list of contrastive units of meaning like the phonemes of spoken languages. These units combine in constrained ways to create the words of the language. While there are some differences amongst the different sign languages in terms of their phonological inventories and constraints, there are many common properties, and the generalisations presented here hold across sign languages, unless otherwise indicated. Stokoe coined the term “cherology” for sign

language,<sup>5</sup> the equivalent of “phonology” for spoken languages. However, sign language linguists, of which he may have been the first, now generally use the term “phonology” for sign languages. Stokoe established three major phonological categories, namely handshape, location, and movement, and he treated each specification within each of these three categories as a phoneme. Later researchers accepted Stokoe’s three categories, but proposed that the specifications within each category function not as phonemes but as phonological features. For example, the ASL signs SICK and TOUCH have the same handshape and the same straight movement. They are distinguished by location only: The location for SICK is the head, whereas the location for TOUCH is the non-dominant hand. Minimal pairs such as this one, created by differences in one feature only, exist for the features of handshape and movement as well.

After Stokoe, Liddell and Johnstone (1989) added another two parameters, namely palm orientation and non-manual features. These five phonological parameters are briefly discussed below.

#### **1.4.1.1 Handshape**

The handshape parameter has over 40 forms or “handshape primes” in ASL. Some handshapes that exist in ASL may not exist in other sign languages, in the same way that some sound patterns in one spoken language do not necessarily exist in all other spoken languages. SASL consist of a set of different handshapes that can be used in conjunction with some or all of the other parameters to form a sign. Fifty-one of the most commonly used handshapes are portrayed in Figure 1.1<sup>6</sup> below. Note that not all the letters of the fingerspelled alphabet are contained in the handshapes used to produce signs.

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<sup>5</sup> *Cheremes* derived from the Greek word *cheir*, meaning “hand”.

<sup>6</sup> Unless otherwise stated, the graphic material used in this thesis was developed as by the SASL curriculum development project which I led.



Figure 1.1. The 51 most commonly used handshapes as identified in SASL

### 1.4.1.2 Location

**Primary location.** The location of a sign refers to the bodily location where the sign is produced. Most signs are produced in the so called ‘signing area’ which forms an imaginary rectangle in front of the body, extending from the top of the head to the navel and from shoulder to shoulder (see the dashed line in Figure 1.2). This allows the eyes to follow the signs with peripheral vision.



Figure 1.2. Signing area

There are however exceptions to rule. A small number of signs in SASL are produced outside the signing area, as shown in Figure 1.3 below:

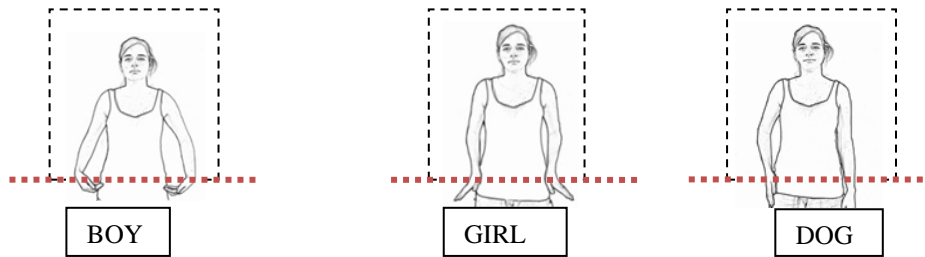


Figure 1.3. Exceptions of the primary positions of signs

**Positions on the body.** Seventeen<sup>7</sup> primary positions on or near the body have been identified in which a sign can be made, as seen in the picture in Figure 1.4. Placement on the hand is a secondary position (in the case of a two-handed or double-handed sign).

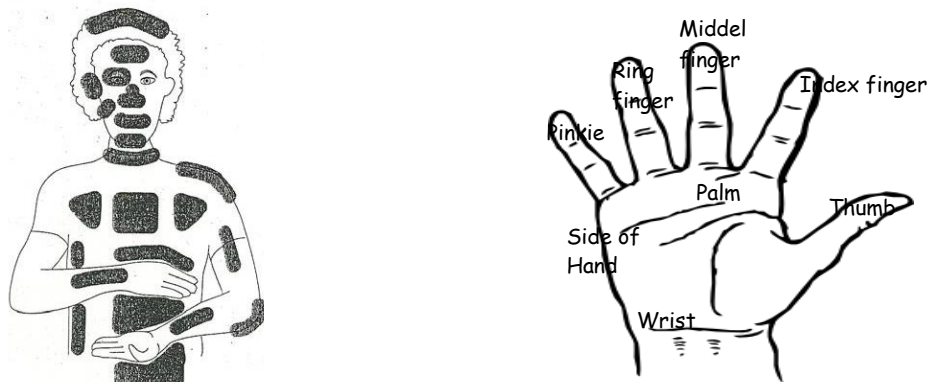


Figure 1.4. Primary positions on the body and secondary positions on the hand

### 1.4.1.3 Palm orientation

Palm orientation refers to the direction in which the hand is turned to produce a sign. The directions of the palm include palm up, palm down, palm right, palm left, palm outward (i.e., palm facing away from the signer), palm inward (i.e., palm facing the signer), or, in the case of two-handed signs, palms facing each other, as shown in Figure 1.5.

<sup>7</sup> Counting positions on each side of the body only once.

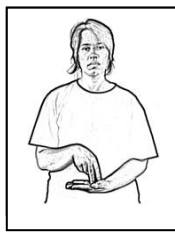


Figure 1.5. Palm orientations

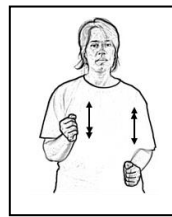
#### 1.4.1.4 Movement

Movement refers to the changing of the location of the hands within the set physical parameters during sign production. Movement as parameter can be analyzed into three dimensions, each briefly discussed below:

**Frequency.** This refers to the frequency of an action. It can either be a single movement (as in STAND in SASL) or a repeated movement (as in RUN); see Figure 1.6.



Single: STAND



Repeated: RUN

Figure 1.6 Movement (single and repeated)

**Directionality.** The movement involved in making a sign is either uni-directional or bi-directional. “Uni-directional” means that the primary movement is only in one direction (as in SLIP in SASL), whereas “bi-directional” means that the primary movement is in two directions (as in PAINT); see Figure 1.7.

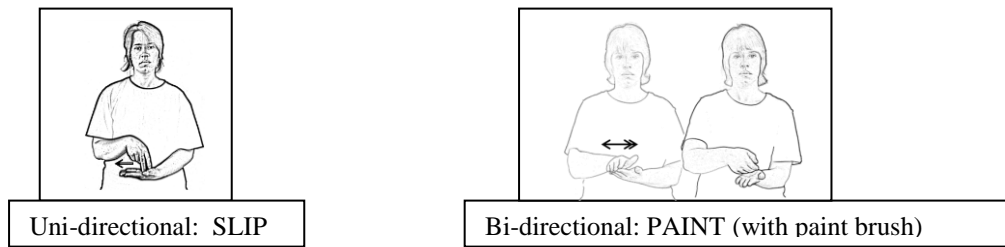


Figure 1.7. Movement (uni-directional and bi-directional)

**Manner.** The manner of movement can be either (i) continuous, where the movement is smooth and loose (as in ALWAYS/FOREVER in SASL), (ii) restrained, where the movement is small, quick and stiff and the hand may bounce back to its initial position (as in QUICK) or “hold”, where the sign begins with a loose movement, but ends abruptly (as in STAY); see Figure 1.8.

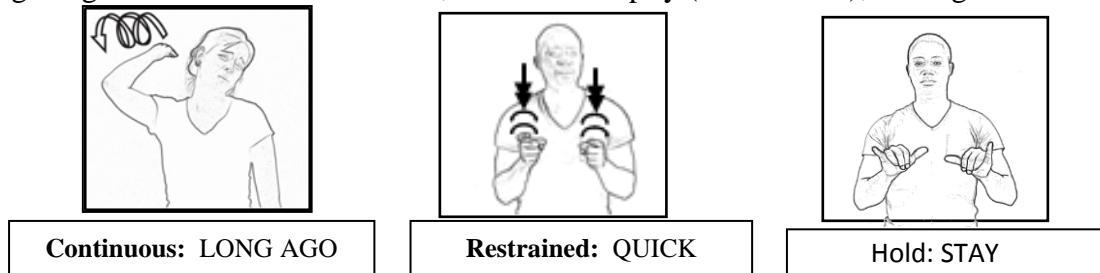


Figure 1.8. Manner of movement (continuous, restrained, hold)

#### 1.4.1.5 Non-manual markers/features

Non-manual markers/features are signals or gestures made without the use of the hands – mostly by the shoulders, head, and face – to convey a message. SASL non-manual features may include, amongst others, a head tilt, a head nod, a head shake, a brow raise, or a shoulder raise. Figure 1.9 shows a few of the many non-manual features that often accompany the manual part of signs. The signs may involve facial expressions, mouth gestures, mouthing, changes in gaze, or movements of the head or body, or a combination of these features.

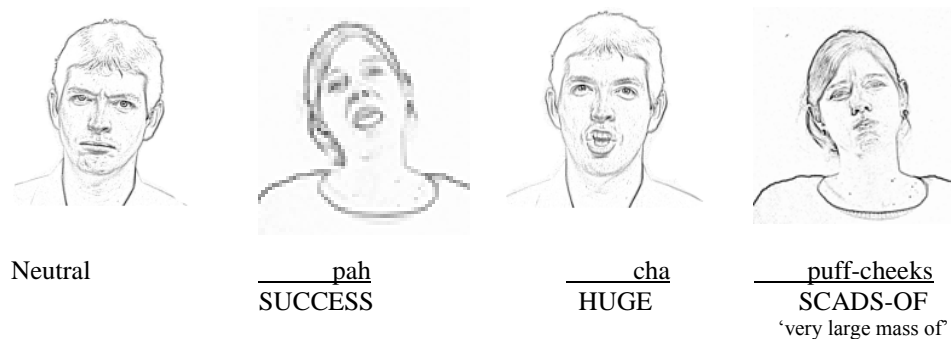


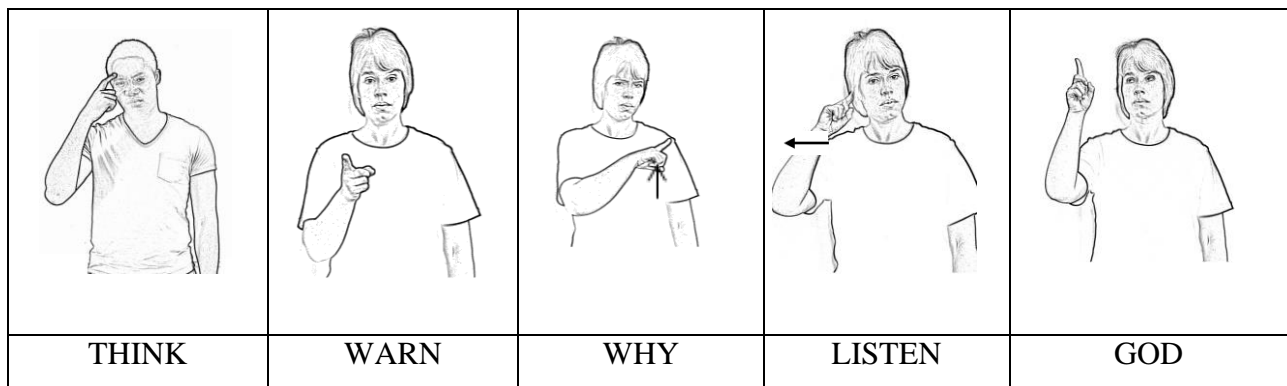
Figure 1.9. Examples of frequently used non-manual markers



Many signs in SASL require a non-manual feature in order to be produced correctly. For example, the sign FINISH is made with the lips protruded. Without these non-manual features, the signs are not correct (see Valli et al. 2011).

#### 1.4.1.6 Combining the parameters into a sign

The above five parameters combine to form a sign. If one of the parameters changes, the meaning of the sign changes. For instance, the signs in Figure 1.10 are all formed by using the same handshape (namely the G-hand). By changing the location, non-manual features, movement and palm orientation, a different meaning is attached to the sign. Within the sign structure, some phonological units combine simultaneously while others are sequentially combined, according to Liddell and Johnson (1989). The first four parameters are manual markers and the last parameter is non-manual markers. The first three parameters are involved in all signs, but movement and non-manual features are optional.



*Figure 1.10. One handshape with different meanings, depending on the other sign parameters*

#### 1.4.2 Syntax in SASL

In a spoken language, different sentence types can be marked by vocal intonation. For example, question forms typically have a rising intonation at the end, whereas declarative statements have a falling intonation (Fromkin, Rodman and Hyams, 2014). In SASL, syntactic information is conveyed through word order (as is often the case in spoken languages as well) and non-manual markers (see Baker, Van den Bogaerde, Pfau and Schermer, in press). As in Auslan, there are six basic SASL sentence types (see Johnston and Schembri, 2007). Sentence types are marked with non-manual movements of the face, head and body, to differentiate between them.

In Table 1.1, five of these types of sentences are provided along with the accompanying non-manual markers. (In the third column, an example of each sentence type is glossed.) The sixth sentence type, question forms, is discussed separately, after the table.

*Table 1 1. Five of the six basic sentence types in SASL (based on Cokely and Baker-Shenck, 1980 and adapted for SASL)*

<b>Sentence type</b>	<b>Non-Manual signals</b>	<b>Glossed example</b>
<b>1. Statements</b>		
Declarative sentences	None	PRO-1 TEST WRITE <i>I write a test</i>
Topicalization	Eyebrows raised Head tilted Possibly a short pause after ‘test’ in the example sentence, which refers then to a specific test and not just any test	PRO-1 TEST WRITE <i>I write the test</i>
Conditional	Eyebrows raised Head tilted Possibly a short pause after ‘rain’ in the example sentence to show that this is the condition for the game to be canceled plus an eye gaze shift	<u>cond</u> TOMORROW RAIN GAME CANCEL <i>If it rains tomorrow, the game will be cancelled</i>
<b>2. Commands</b>	Direct eye contact with addressee May frown	*SIT* <i>Sit!</i>
<b>3. Negation</b>	Head shakes side to side May frown or squint	<u>neg</u> MAN HOME <i>The man is not home</i>

#### 1.4.2.1 Questions in SASL

Questions in sign language are accompanied by a strong visual aspect and are supported by specific facial expressions with specific non-manual markers (pertaining to the eyes, facial expression, head movements or body posture). Note that during question formation, facial expressions in sign language are equal to vocal intonation in spoken languages: When the required facial expressions and non-manual features are not applied, the question might be interpreted incorrectly.

There are three types of questions in sign language, namely yes/no questions (including tag questions and so-called QM<sup>8</sup>-wiggle questions; see below), *wh*-questions and rhetorical questions. The latter is however not viewed as a true question type as no response is expected from the addressee.

**Yes/No questions.** The non-manual features used to indicate a yes/no question consist of raised eye brows, slightly widened eyes, and often a forward tilt of the head and/or body. Sometimes the shoulders are also raised, with the last sign held. This set of non-manual behaviors occurs during production of all of the signs that form part of the question. For example, when asking someone whether s/he would like to have some coffee, one would produce the yes/no question *Would you like some coffee?* (see Figure 1.11), which would be glossed as follows:

Y/N  
 \_\_\_\_\_  
 COFFEE



*Figure 1.11. Manual and non-manual behavior accompanying the yes/no question Would you like some coffee?*

To provide another example of yes/no questions: If Person A talks about a particular movie with Person B, and Person B wants to ask whether Person A had seen the movie, Person B would use the non-manual behaviors portrayed in Figure 1.11 while producing the manual signs for “FINISH”, “SEE”, “MOVIE” and “YOU”. The meaning of the signed utterance would be the yes/no question *Have you already seen the movie?*, which is glossed as follows:

Y/N  
 \_\_\_\_\_  
 FINISH SEE MOVIE YOU

<sup>8</sup> QM stands for “question mark”; see below.

Occasionally, a yes-no question is accompanied by a question mark, as seen in Figure 1.12, which is signed directly after the yes/no question. This type of question is called a QM-wiggle question and is usually asked when one is surprised by the information that one has received or when one wants to check one's comprehension of what has been conveyed. One does not expect an answer other than "yes" or "no" to this type of question. Non-manual features used when asking a QM-wiggle question are raised eyebrows, widened eyes, head and body tilted forward, and shoulders raised.



*Figure 1.12. QM-wiggle question*

Tag questions are another form of yes/no question. Tag questions require a simple confirmation or denial. In sign language, this type of questions usually consists of a declarative sentence followed by the sign for RIGHT/TRUE (see Figure 1.13 for the sign in SASL), as in the following question that means "You have three children, right?":

tag quest

---

YOU CHILD++ THREE HAVE TRUE



*Figure 1.13. Tag question*

Unlike *wh* questions, yes/no questions do not involve a change of word order, and the non-manual marking must extend over the whole utterance in order for the utterance to be judged as a question and not as a statement.

**Wh-questions.** The non-manual features used for forming *wh*-questions (i.e., those containing the *wh*-words *who*, *what*, *where*, *when*, *why*, *which* and *how*) consist of a brow squint, a tilting of the head and furrowed eyebrows. Sometimes the body shifts forward and the shoulders are raised. For example, if you want to ask someone how a mutual friend got to a party, you would use the set of *wh*-word non-manual features portrayed in Figure 1.14 while producing the manual signs for HOW, COME-here, HOW.



Figure 1.14. Non-manual features accompanying a how *wh*-question (here seen while producing the sign HOW)

Mostly, question words are signed only at the end of the sentence. *What has happened?* will thus be glossed as:

wh

---

HAPPEN WHAT

Examples of question words used for *wh*-questions are provided in Figure 1.15 below.

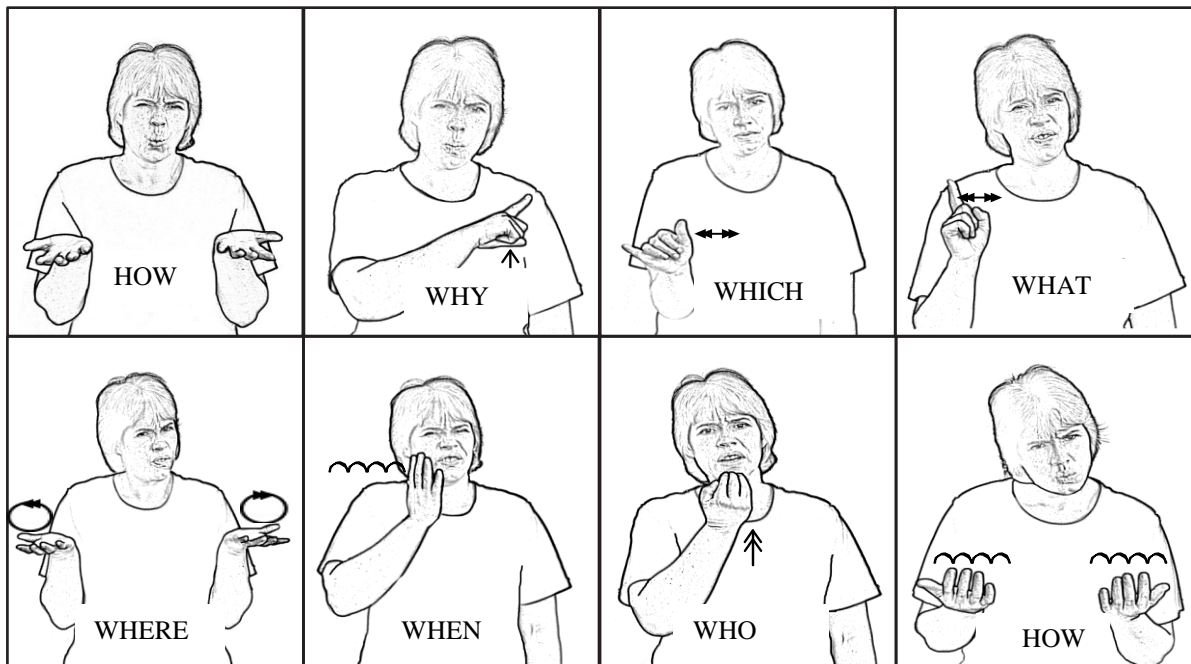


Figure 1.15. Signs for various wh-words

**Rhetorical questions.** Although there are only two basic types of questions in sign language, signers often use a third type of question, namely rhetorical questions. The latter is not seen as a true question because no response is expected from the addressee. Rhetorical questions are used for emphasis in sign language.

To distinguish the non-manual features for rhetorical questions from that of yes/no questions, the body is in a neutral position as opposed to tilted forward, and the head is tilted in a different way than in yes/no questions, as shown in Figure 1.16. Rhetorical questions are far more common in sign language than in English. For example, *I don't like garlic* may be signed as [I LIKE]<sup>NEGATIVE</sup> [WHAT?]<sup>RHETORICAL</sup>, GARLIC. This strategy is commonly used instead of signing the word *because* for clarity or emphasis. For instance, *I love to eat pasta because I am Italian* would be signed PASTA I EAT ENJOY TRUE [WHY?]<sup>RHETORICAL</sup>, ITALIAN I.

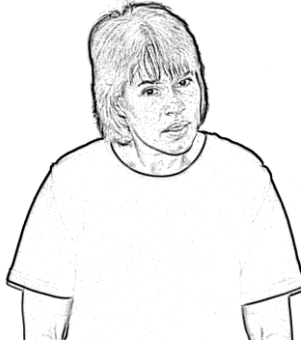


Figure 1.16. Non-manual features accompanying a rhetorical question

### 1.4.2.2 Tense marking in sign language

Sign language expresses time metaphorically, through the movement of individual signs within particular areas in the signing space. For example, the area in front of the shoulder is used metaphorically to refer to what lies ahead of the signer (i.e., to the future). The area behind and at the signer's shoulder represents the past. The sign NOW is made immediately in front of the signer. One way in which sign language expresses this information about time is with a specific set of signs that are produced on a "timeline", as portrayed in Figure 1.17.

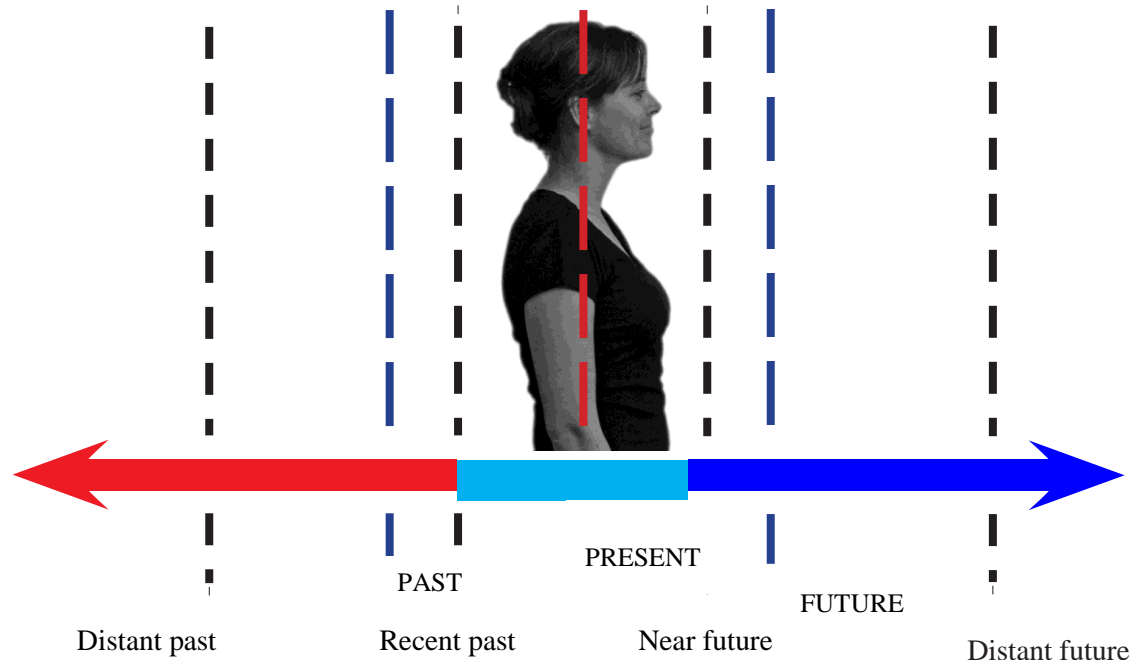


Figure 1.17. The so-called "bilateral timeline" in sign language

Time signs are also used to communicate information about time or to indicate regularity. Sign language does not use suffixes to indicate tense such as past or continuous tense (so sign language does not use the equivalent of *-ed* or *-ing* in English). Instead, sign language uses time concepts to indicate the past, present or future tense. For example, in English, the concept 'kicked' is expressed by the past tense form of the word *kick*, namely *kick* + past tense morpheme *-ed* = *kicked*. In sign language, the same concept will be expressed by using the sign for KICK directly followed by that for FINISH. When the time at which an action was performed is indicated by an adverb, the time sign does not follow the verb sign (much as in the historical present tense used in Afrikaans), as in YESTERDAY ME SHOP GO (the sign language equivalent of *Yesterday, I went to the shop*) instead of YESTERDAY ME SHOP GO FINISH.

### 1.4.3 Classifiers

Classifiers are described by Duke (2009: 127) as “powerful tools”; they give clarity and detail about what is being conveyed without the user having to use many different signs. Classifiers are specific handshapes with particular palm positions. The specific handshapes of classifiers can represent recently referred to objects and display their movements, shapes, locations, and actions. Specifically, classifiers can be divided into nine classes, namely (i) semantic classifiers (S-CL), (ii) body classifiers (B-CL), (iii) body part classifiers (BP-CL), (iv) locative classifiers (L-CL), (v) instrument classifiers (I-CL), (vi) size-and-shape specifiers (SASS), (vii) plural classifiers (P-CL), (viii) descriptive classifiers (D-CL), and (ix) element classifiers (E-CL). See Figure 1.18 for some examples; also see Baker-Shenk and Cokley (1991: 287).






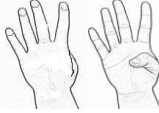








					
					
S-CL:1 (person) “standing”	S-CL: B (vehicle) “car”	L-CL:C L- CL:B “placing cup on table”	(2h)P-CL:4 “long line of people”	(2h)SASS:C “huge pipe”	BP-CL:V “looking at”

Figure 1.18. Some handshapes with which to classify

Some classifiers function in the manner in which pronouns do in English, as they represent a particular group or “class” of nouns. Classifiers, however, cannot be used in a sentence until the signer has indicated which particular referent the classifier represents. For instance, in SASL, the concept ‘car’ is represented by the B-handshape as in **CAR B-CL** (i.e., ‘car’ is represented by a B-handshape used as classifier; for ease of reading, classifiers are placed in bold type-face in this section). Classifiers can also function as verbs. For example, the English sentence *The red car bumped into the left door of the orange car* will be glossed as follows: **CAR RED B-CL CAR ORANGE B-CL DOOR LEFT BUMP**. Classifiers can also convey information about the manner of an action. This information is usually expressed with an adverb in English, e.g. *The red car drove fast and passed the orange car*. This sentence in SASL will be glossed as **CAR RED B-CL DRIVE-FAST CAR RED B-CL CAR ORANGE B-CL PASS**. Classifiers furthermore provide information about the location of the referents and their actions. *The red car is parked under the tree* will for instance be glossed as **CAR RED B-CL TREE B-CL PARK**. In this way, classifiers also show the spatial relationship between different people or entities. For example, *Mother and Father walked to the shop* can be glossed as **MOTHER 1-CL FATHER 1-CL SHOP WALK**. Classifiers are often used in storytelling as they can provide a “three-dimensional depth”. When used correctly, classifiers add expediency and clarity to a signed conversation.

#### 1.4.4 Different sign languages

From the above brief discussion, it is clear that sign languages of Deaf communities are not based on spoken languages. Many aspects of Auslan, for instance, are quite unrelated to Australian or any other variety of spoken English. For example, the English word *light* has several meanings, including “does not weigh very much”, “is pale in colour”, “electric light-providing source in a building”. In Auslan, each of these meanings would be expressed by a different sign, as illustrated in Figure 1.19, despite the fact that only one sound form is used in Australian English (Johnston and Shembri 2007: 13).



Figure 1.19. Three Auslan signs for the English word *light* (from Johnston and Schembri 2007: 13)

Despite what might be deduced from the above discussion on the grammar and linguistics of sign languages, not all sign languages have the same structural and other features. In this regard, Bellugi and Klima (1991: 118) found that signs in Chinese Sign Language and ASL are composed of simultaneously articulated layered elements comprising a small set of handshapes, locations, and movements, and with morphological patterning layered simultaneously with the root. Chinese Sign Language and ASL are also similar in the ways in which they make use of space and spatial contrasts. These two languages are however completely autonomous (and there are no points of contact between them), and therefore each has its own lexicon, phonology, grammatical morphology, and syntactic rules, which makes them mutually unintelligible.

That said, the sign language used in certain countries might resemble the sign language used in other countries. For example, Auslan is closely related to British Sign Language. Some people in the Australian Deaf community regard Auslan as “essentially the same language” as British Sign Language (Johnston and Shembri 2007: 60), probably because mostly lexical differences, and

only subtle differences in grammar, are reported between Auslan and British Sign Language. These similarities could be ascribed to historical factors, namely to the fact that Australia was a British colony. Although the sign language used in New Zealand differs from that used in Australia and Britain, there are also only slight differences between New Zealand Sign Language and British Sign Language.

Auslan was however also influenced by a language other than British Sign Language, namely Irish Sign Language, as an outflow of the founding of a school for the Deaf in Waratah by Irish nuns in 1886. The sign language used in a particular country is often influenced by the religious denomination that founded schools for the Deaf in that country, often Catholics or Protestants. According to Bellugi and Klima (1991: 118), there are also other influences causing variations in signs, namely social class, men's and women's dialects, signs linked to sexual orientation and to ethnic groups, as well as age-related dialects.

Sign languages thus have some universal characteristics, but there are also characteristics distinct to particular individual sign languages (see, for example, Emmorey 2003: ix-x). From the above, it should be clear that SASL, the language relevant to the current study, is not a translation of Afrikaans or English, but a language in its own right. For Deaf children acquiring Afrikaans or English (or any other spoken language for that matter), it is thus not merely a case of translating sign by sign; it is a case of acquiring the Afrikaans or English as the speaker of any spoken language would but without the benefit of hearing the language in the input.

## **1.5 Chapter outline**

In this chapter, I presented a general overview of the grammar and the linguistics of sign language. In Chapter 2, I present an overview of research on the Deaf Education, both historically and presently, abroad and in South Africa. I also discuss the development of reading skills of Deaf children and the bilingual-bicultural approach and its influence on Deaf Education. Chapter 3 sets out the framework within which this study was conducted. I give a broad overview of the development of the curriculum for SASL as a subject and discuss the testing and piloting of this curriculum, elaborating on its advantages as well as its limitations. In Chapter 4, I set out the

research design and the methodology that I used to collect the data and to analyze (i) language skills in SASL and (ii) reading proficiency. The four case studies themselves are presented in Chapter 5. The last chapter, Chapter 6, discusses and summarises the results and discusses the implications of the findings for the bilingual-bicultural approach to Deaf Education in South Africa.

## 1.6 Definition of core terms

**Deaf/deaf:** The use of the lowercase “d” and the uppercase “D” is a controversial matter in Deaf/deaf writings. Gallaudet University uses Padden and Humphries (1988) as reference in the following explanation: *deaf* with a lowercase “d” is usually an audiological description of a person’s hearing level, referring to a person who is unable to use his or her hearing for the purpose of understanding everyday communication. Being deaf does not mean the person cannot hear anything at all, and not all people who are deaf identify themselves with, or participate in, Deaf culture. *Deaf* with an uppercase “D” refers to persons (both adults and children) who share the use of sign language and common values of Deaf culture, rules for behavior, traditions, and views of themselves and others (Padden and Humphries 1988). People who identify with Deaf culture and describe themselves as Deaf may have a range of hearing levels. Reagan (2008: 166-167) warns that the practice of distinguishing between Deaf and deaf has the potential to “oversimplify and dichotomise the complexity of membership in the Deaf community”. Referring to the work of several prominent authors in the field of Deaf studies, Reagan (2008: 167) states that “deafness is not only socially and individually constructed, but its construction is complex and multilayered”. In this thesis, I attempt to use *Deaf* for the cultural and language group and *deaf* for the audiological state, but I agree with Reagan that it is not always possible to make a simple choice as to which term would be the correct one in a particular context. In cases where either or both could arguably be suitable, I use the capitalised version.

**Sign language:** Sign language is a “real” language, equivalent to any other natural human language. Sign languages use a different modality than spoken languages, with meaning being conveyed by means of non-vocalised forms of communication including movement of the hands, upper body and face. Signs in sign languages are made up of five parameters, namely hand-

shape, location, movement, palm orientation and the non-manual features such as specific facial expressions that carry important grammatical information. Sign language has its own distinct linguistic structure that includes syntax, morphology, phonology and language conventions. It is not based on any written or spoken language. There are various sign languages, including Auslan and American, British, Irish, New Zealand and South African Sign Language. “Sign language” is not synonymous with “signed language”. For examples of the latter, see “Signed Exact English (SEE) or Signed Exact Afrikaans (SEA)” below.

**South African Sign Language (SASL):** SASL is a visual-spatial language used by the Deaf community of South Africa. SASL is a natural language (like any natural spoken language) that allows its users the opportunity to learn and communicate and to express thoughts, feelings and abstract ideas (Curriculum Assessment Policy Statement 2012).

**Parameters of sign language:** The parameters of a sign language are the five characteristics or basic parts of a sign, namely handshape, location, palm orientation, movement, and non-manual features.

**Handshape:** This is the parameter of a sign that refers to the shape of the hand at the onset of the sign. The form adopted by the hand depends on the position of the fingers.

**Location:** This is the parameter of a sign that refers to where the sign is articulated, either on the body or the signing space.

**Movement:** This is the parameter of a sign that pertains to the direction, speed, repetition and manner of movement taking place.

**Non-manual features:** This parameter of a sign pertains to the actions are produced by any part of the body other than the hands. These actions express grammatical meaning using movements of the eyes, eyebrows, head, or shoulders, various kinds of facial expressions, and lip, cheek, and tongue movement. There are no equivalents for these features in a spoken language such as English.

**Signed Exact English (SEE) or Signed Exact Afrikaans (SEA):** Signed languages such as Signed Exact English (SEE) or Signed Exact Afrikaans (SEA) are communication systems and not real languages. They are signed versions of spoken languages, following the rules of the spoken languages that are being conveyed manually. (Compare this to sign languages (see above) that are autonomous natural human languages.) Signed Exact English (SEE) and Signed Exact Afrikaans (SEA) are intermediate forms of Manually Coded English and Afrikaans, respectively. The systems incorporate many forms borrowed from English or Afrikaans along with many invented forms. For instance, in Signed Exact English, one can add a fingerspelled LY to adjectives to create adverbs. In America, some forms of Signed Exact English consist of originally ASL signs that have been changed extensively. This phenomenon also occurs in South Africa between Signed Exact English or Signed Exact Afrikaans and SASL.

**Bilingual-bicultural approach:** The bilingual-bicultural approach is an approach to the education of Deaf learners which includes several components. Academic subject matter is taught, transitionally, using the learner's primary language (i.e., sign language). The spoken language of the community is taught as the learner's L2. Deaf learners are instructed in the history, culture and language of the Deaf.<sup>9</sup> Lane, Hoffmeister and Bahan (1996: 294) state that the bilingual-bicultural approach (i) can foster a healthy self-image in the learner, (ii) can develop the learner's cognitive potential, (iii) creates a bridge to the learner's existing linguistic and cultural knowledge, and (iv) develops the learner's reading and expressive skills in the spoken language (which is his/her L2).

**Language of teaching and learning (LoLT):** The LOLT is the language used to convey subject matter, i.e., the medium of instruction in a particular school or classroom.

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<sup>9</sup> Although the approach is called bilingual-bicultural", no sources could be traced on how Deaf children are explicitly instructed on aspects of hearing culture. There appears to be an unwritten consensus that Deaf children are exposed to the norms and values of their local hearing community and that it is likely that they will acquire knowledge of these through this exposure. What is, however, explicitly taught in programmes following the bilingual-bicultural approach are aspects of Deaf culture. Ascertaining what role hearing culture plays globally in programmes following the bilingual-bicultural approach is an avenue for future research that falls outside the scope of the present study.

**Grade 0 and Grade R:** In this thesis, “Grade R” refers to the school year directly prior to the Grade 1 year. In mainstream schools, the children will typically turn 6 years during the course of their Grade R year (although children are permitted to enter Grade R at 4 years of age provided that they turn 5 before or on 30 June of their Grade R year). I use “Grade 0” here to refer to the pre-Grade R phase, which in schools for the Deaf is accessible for children who are at least 3 years old at the time of enrolment.

## Chapter 2

### Deaf education and literacy acquisition

#### 2.1 Introductory remarks

The primary goal of education in our complex society is widespread cultural and critical literacy. As such, schools endeavor to endow students with reading skills that ultimately lead to the development of culturally and critically literate adults (Moore and Meadow-Orlans, 1990). Good readers at the elementary level are those who master these skills quickly and then apply them to texts of increasing complexity in a variety of areas, expanding both knowledge and skills. Prior knowledge of the vocabulary and grammar of a language is a prerequisite for reading. This knowledge helps children to anticipate, make sense of and predict the sequence of information coded in written language. In the case of Deaf children, the subordinate role of reading to language is often ignored. Because sign languages do not have written forms, Deaf children are often required to learn to read, and to read to learn, both at the same time and all in a L2.

Reading requires two related but separable capabilities, namely (i) familiarity with a language and (ii) understanding the mapping between that language and the printed word (Chamberlain and Mayberry, 2000; Hoover and Gough, 1990). Profoundly deaf children find it very difficult to read fluently as they are disadvantaged on both counts. Indeed, children with less severe hearing loss are also disadvantaged in this regard (Briscoe, Bishop and Norbury, 2001). Furthermore, deaf children will have great difficulty in making sense of what has not been experienced and stored in the form of language. Recent research (Brueggemann, 2004: 147) indicates that individuals with good signing skills are better readers than those with poor signing skills, even though sign language does not map in any systematic way onto a spoken language such as English or Afrikaans. It thus appears that knowing a language, even if it is a language that cannot be captured in print, facilitates reading.

Deaf children find themselves in a situation where they belong to a linguistic minority who has its own language that was previously not approved nor allowed within the educational system.



Wrigley (1996) states that deaf children are thus linguistically disenfranchised; in certain cases, deaf signing children are still forcibly restrained from using their L1 to access a L2 as language of literacy.

According to Brueggemann (2004), one of the central yet unresolved questions in Deaf education presently is how to create an environment in which Deaf children can experience and develop both the natural sign language of the Deaf community and the language of the hearing community,<sup>10</sup> the latter as a language of literacy. For L1 development in any language to take place, there are three prerequisites (Brueggemann 2004:93), namely (i) exposure to the language to be acquired, (ii) interaction with speakers of the language (thus active participation instead of passive observation), and (iii) access and participation at the right time (i.e., during that period in which language can be acquired naturally and without explicit instruction). According to Mayberry (1993), Newport (1990) and Johnson and Newport (1991), delayed exposure to a L1<sup>11</sup> has serious consequences for the ultimate success in language acquisition.<sup>12</sup> Not only are linguistic experiences essential for language development, but both the quality and quantity thereof are important (Brueggemann 2004: 95, 96). In the case of the deaf child of hearing parents who are not fluent users of a sign language, there is (i) in some cases, no or limited exposure to sign language for the child, (ii) no or limited interaction with users of the language, and (iii) delayed access to and participation in sign language. Also, where the hearing parents start learning sign language after the birth of their deaf child, the signed language input that the child received from the parents are inferior in terms of quality and quantity, as the parents would not have reached native-like or even advanced levels of proficiency in the sign language.

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<sup>10</sup> This makes reference to bilingualism in the Deaf community, to which I return in section 2.4.

<sup>11</sup> Deaf children may not be receiving accessible language until after the critical period due to lack of provision of hearing amplification (Grimshaw, Adelstein, Bryden and MacKinnon 1998) or because they were denied access to sign language (Mayberry and Fischer 1989; Emmorey and Corina 1990; Newport 1990; Emmorey 1991; Mayberry and Eichen 1991).

<sup>12</sup> Failure to acquire language in the early years also results in delay or disruption in the development of cognitive skills that interweave with linguistic ability. Children exposed to their L1 late have trouble with verbal memory organisation (Rönnerberg 2003), mastery of numeracy and literacy (MacSweeney 1998), and higher-order cognitive processing such as executive functions and theory of mind (Courtin 2000; Courtin and Melot 2005; Morgan and Kegl 2006; Schick, de Villiers, de Villiers and Hoffmeister 2007; Courtin, Melot and Corroyal 2008; Figueras, Edwards and Langdon 2008; Marschark and Hauser 2008; Rempel and Peters 2009).

A Norwegian study (Arnesen, Enerstvedt, Engen, Engen, Høie and Vonen 2008) aimed to ascertain the extent to which deaf children are exposed to language (spoken and/or signed). A group of mothers and a group of teachers participated in the study. They had to indicate which language children with hearing loss command best, selecting from the following options:

- (i) Signs without speech: Norwegian Sign Language (NSL), the natural language of the Deaf community; Norwegian-influenced NSL (i.e., sign without speech, but not completely adhering to the grammar of NSL); or Signed Norwegian without voice (i.e., sign without speech, but adhering to the grammar of Norwegian)
- (ii) Speech without sign: Norwegian, the oral language of the hearing community; or NSL-influenced speech (i.e., speech without sign, but not completely adhering to the grammar of Norwegian)
- (iii) Both sign and speech: sign without speech support; simultaneous speech and sign (i.e., signs partly following the grammar of NSL and speech partly following the grammar of Norwegian); signed Norwegian with voice (i.e., simultaneous sign and speech, with both signs and speech following Norwegian grammar); or speech with sign support
- (iv) Another language
- (v) Gestural communication

In all cases, both the mother and the teacher independent of one another selected the same option for each student. Collectively, mothers selected spoken Norwegian and NSL as their children's best languages; both of these options were chosen by 40 percent of mothers. Teachers also chose spoken Norwegian as best language (50 percent) followed by and NSL (33 percent) and mixed systems (10 percent). The remainder chose code mixing.

The mothers and teachers were also asked what they use when addressing or teaching the deaf children. Their responses correlated with what they indicated the children's strongest language to be. Also, mothers and teachers were asked to rate on a scale of 0 to 9 their ability to use and understand NSL, with 0 being no ability and 9 being native-user ability. The average score for both mothers and teachers was 4.4 for using NSL and 4.5 for understanding the language (but there were also scores as low as 2.4 and 2.5), with no mother or teacher rating their own abilities very highly).

The results of the Norwegian study of Arnesen et al. (2008) suggest that many deaf children do not have access to a clear linguistic model, that there is a tendency to describe children's competence in terms of language rather than mode, and that mode and code mixing complicated the situation as sign languages and the various systems for signing an oral language share a lexicon, but have different grammars. This has implications for developing a level of literacy that will prepare children with hearing loss to become independent adults who can function successfully in two cultures. Throughout the Norwegian study, it became clear that the acquisition of natural language is important linguistically and culturally. Children who experience code mixing and who may not have a well-established primary language are at a disadvantage as far as the acquisition of both language and literacy is concerned. This study emphasised the importance of the acquisition of a natural language (L1) during the window period for language acquisition to become literate (see Brueggemann 2004: 92-108).

Lane et al. (1996: 280) state that deaf children reveal that they have difficulty learning to read in English because of their lack of knowledge of English language structure, and because they have trouble integrating information from the past and using it in devising predictive and generable strategies for understanding print. In the next section, the discussion turns to methods used to teach deaf children language, literacy and other skills.

## **2.2 Teaching methods used in Deaf education**

From the 18th century to date, many different teaching approaches have been used in Deaf education, including approaches which relied heavily on the auditory and spoken modality, forbidding deaf learners to use sign language. Oralism, Signed Exact English (SEE), Total Communication (TC), Simultaneous Communication (Sim-Com), Sign Supported Speech (SSS), other Manually Coded English (MCE) systems<sup>13</sup> and the bilingual-bicultural approach are some of the well-known approaches to Deaf education and communication; see Lane et al. (1996: 270)

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<sup>13</sup> For example Visual Phonics, a system of 46 handshapes with corresponding movements, which when used together are called "cues". These cues represent the 46 phoneme sounds of spoken English. This system was originally developed by a mother for her deaf son, to aid in teaching speech and reading.

and Brueggeman (2004) for reviews. Each of these teaching systems, as indicated on the timeline in Figure 2.1, will be discussed below.

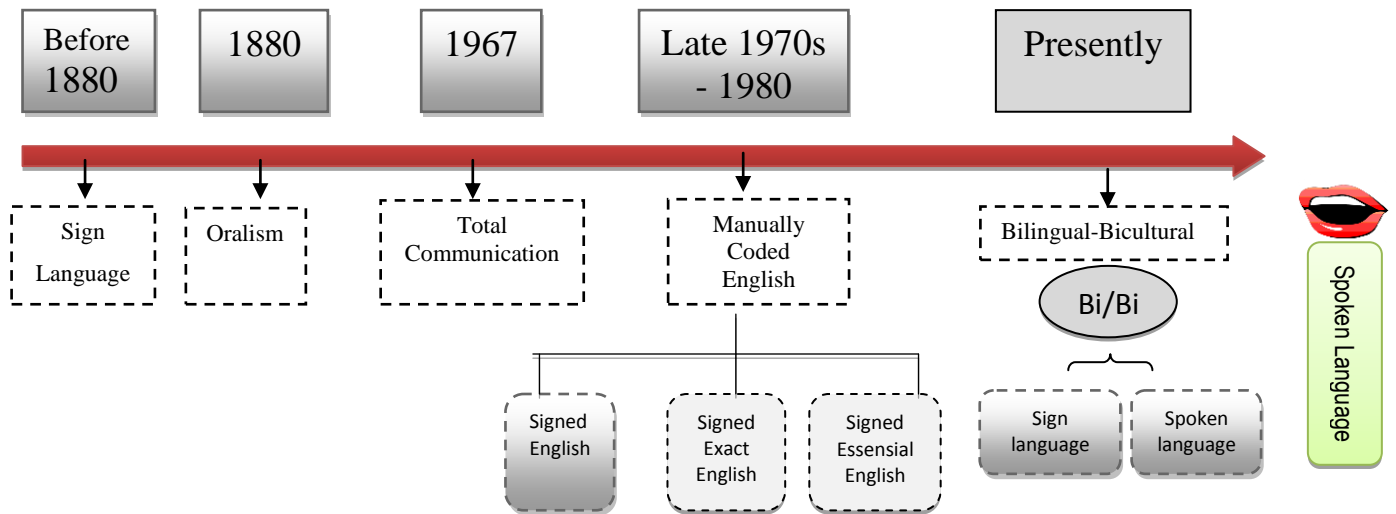


Figure 2.1. Timeline indicating preferred approaches in Deaf education

### 2.2.1 Sign language (before 1880)

Prior to the Second International Congress on Education of the Deaf, better known as the “Milan Conference”, held in 1880, Deaf education was largely controlled by Deaf people, and Deaf culture was enjoying a golden age. Internationally, Deaf people were establishing and administrating schools, were editing hearing newspapers, were celebrated artists and publishers and were literate in many languages. In America, Deaf Americans were among the most highly educated members of their communities (Wrigley 1996).

During this period, Deaf education was conducted in sign language. When Deaf children were taught in the language of their community, they were able to take part in that community. Their method of communication was considered valid: The Deaf were mostly perceived as “normal people” communicating in a way that was “normal” for them, and they were not required to exchange their language and culture for spoken variants when entering formal education. There was a time in US history when nearly half of all teachers of the Deaf were deaf themselves (Lane et al. 1996: 429). The outcomes of using sign language as medium of instruction were qualified deaf doctors, deaf attorneys, deaf teachers and overall a well-educated Deaf society.

### 2.2.2 Oralism

The Milan Conference put an almost complete end to the education of deaf children in sign language around the world. After deliberations from 6 to 11 September 1880, the conference delegates declared that (i) oral education was superior to education conducted in sign language and passed a resolution banning the use of sign language in school, and (ii) that oralism (i.e., using only speech and not sign language) was the only method that should be used to teach deaf children. It was an unrepresentative decision in the sense that only two of the 150 teachers present at the conference were deaf. The oral approach to Deaf education also had its support in South Africa, especially in schools for White deaf learners during the Apartheid era (Storbeck, Mangongwa and Parkin, 2009: 134).

By banning the use of sign language in schools,<sup>14</sup> deaf educators were forced to leave the system, as they could not teach through medium of a spoken language. A typical school day in a school for the Deaf would consist of hearing teachers teaching deaf learners through the auditory modality how to produce spoken language, thus ignoring the needs of the deaf dependent on the visual modality. The view in Deaf education was that it is a “hearing world, and deaf people must learn to cope with it”, where coping meant communicating like hearing people do.

The Milan Convention is regarded by historians as an event that undermined a community, effectively causing the standing of the Deaf community to regress from one close to normal in the early eighteenth and nineteenth centuries to one with an inferior status (Wrigley 1996). There is historical evidence that deaf people worked as politicians, poets and lawyers prior to 1880, but after the Milan Convention banned the use of their language in schools, the status of deaf persons in the community diminished (Sturley 2007). Those deaf learners who were not successful under the oral method after several years were transferred to manual classes and considered “oral failures”. Some consider this the “Dark Age of Oralism” (Duke 2009: 20). The almost exclusive

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<sup>14</sup> Deaf students in pure oral programs were not allowed to sign in class post-Milan Convention. They were also forbidden to sign in dormitories. Students caught signing were punished (but students continued to learn sign from each other anyway). One type of punishment of deaf students was to force them to wear white gloves that were tied together to prevent them from using signs.

use of the pure oral approach in Deaf education continued well into the twentieth century, even though this approach rendered poor results: The academic level of deaf children exiting school was comparable to that of hearing students in the third grade (Brueggemann 2004: 3).

### **2.2.3 Total Communication**

Total Communication was originally developed by David Denton (a hearing teacher) at the Maryland School in Columbia, America in 1967. Total Communication was intended to find a middle ground between oralism and manualism and to put an end to the long raging disputes between these two schools of thought concerning Deaf education. In practice, however, most Total Communication programs use some form of Simultaneous Communication (discussed in section 2.2.5). Total Communication allows multiple approaches to communication that alternate or combine the use of sign language, fingerspelling, speech, speech-reading, auditory training, writing, drawing and pantomime “to ensure effective communication with and among hearing impaired persons” (Garreston 1976, quoted in Lou 1988: 91; see Brueggeman 2004: 146).

Total Communication educational programs have been established in, amongst others, Australia, China, France, Germany, Malaysia, the Netherlands, Scandinavian countries, Singapore, South Africa, the UK and the USA. Total Communication became entrenched in most Deaf classrooms worldwide (Brueggemann 2004: 146), including in South Africa. Some schools using the oral method changed entirely to Total Communication, whilst others added sign into their existing program or simply allowed children to sign amongst themselves without punishment. Often, the “sign languages” used in oral programs were (i) constructed manually coded spoken languages, such as Manually Coded English systems (see section 2.2.4) like Seeing Essential English or Signing Exact English, or (ii) sign language signs superimposed on the syntax of a spoken language, such as ASL signs in English word order. The previously oral-only programs used these systems with speech in a practice known as Sign Supported Speech or Simultaneous Communication (see section 2.2.5).

One disadvantages associated with Total Communication is that it tends to limit a deaf child’s language experience in the sense that the child is never exposed to complex spoken language or

to complex sign language. Such “dumbing down” of both languages prevents children from attaining fluency in either language (Wrigley 1996).

#### 2.2.4 Manually Coded English systems

Manually Coded English<sup>15</sup> can be any one of several signing systems invented by hearing educators of the Deaf to represent words in English sentences using (i) natural signs borrowed from the sign language of the Deaf community as well as (ii) other signs contrived to serve as translation equivalents for English affixes and English function words (such as articles and prepositions). Manually Coded English systems are thus not natural languages but artificial communication systems. The three most commonly used systems of Manually Coded English are the following:

- (i) Signed English: This Manually Coded English system, invented by hearing Gallaudet University professor of education Harry Bornstein in 1973, uses relatively few invented signs, mostly for articles and common inflections of English verbs.
- (ii) Signing Exact English: This is an intermediate form of Manually Coded English, invented by Deaf Gallaudet University professor of education Gerilee Gustason in 1996. This is the most widely used system of Manually Coded English. It incorporates many signs borrowed from sign language along with many invented signed forms, such as adding fingerspelled LY to adjectives to create adverbs. Some of the forms that were originally ASL signs have been changed extensively. Signing Exact English assigns signs to English base words taking into account the pronunciation and spelling of the words rather than their meaning. Thus, the same sign would be used for *right* “direction”, *right* “correct” and *right* “privilege”.
- (iii) Seeing Essential English: This system was invented by a Deaf instructor at the Michigan School for the Deaf, David Anthony, in 1966. It is a form of Manually Coded English that decomposes English words into their smallest semantically meaningful units and uses approximations of signs from sign language or arbitrarily created sign forms to portray these units. Signs used in Seeing Essential English are essentially based on the spelling of

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<sup>15</sup> Only systems of Manually Coded English are discussed here; there are however manually coded versions of other languages as well, such as Manually Coded Afrikaans or Manually Coded Sesotho.

English syllables. Thus, the sign for *carpet* contains signs based on ASL CAR and PET (the verb) (Lane et al. 1996: 270).

The use of Manually Coded English as a L1 for Deaf learners is problematic, because it entails exposing Deaf children to an artificial signing system (and not a natural language) as their L1. The human mind contains a language acquisition device, a bio-program, innate in every child (hearing or deaf) that guides the stages and course of L1 acquisition. As stated by Steward and Clarke (2003: 29), “we are born with a language acquisition device and ... we are ... programmed to learn a language if we have access to it at an early age. We don’t have to learn any rules. All we need to do is to hear or see people using a language and we will learn it.” Lane et al. (1996: 272) state the following about the Manually Coded English systems that were devised in an attempt to improve the language acquisition of the Deaf: “This stratagem was destined not to succeed, because the M[anually] C[oded] E[nglish] systems are not natural languages that perforce incorporate the principles of the bio-program. For a language to incorporate those principles, it must be learned as a native language by children who later pass that language to the next generation. Instead, M[anually] C[oded] E[nglish] systems entail attempts merely to change the ‘delivery system’ (from voice to hands) of a language that is not accessible to Deaf children (spoken English) and not suited to the visual-manual mode of transmission”. This system cannot assist the Deaf child to build a grammar of either spoken language or sign language.

### **2.2.5 Simultaneous Communication (Sim-Com)**

Simultaneous Communication, also called “sign-supported speech” is a communication strategy in which speech (i.e., voice) and signs are produced at the same time. In theory, both Deaf and hearing interlocutors should feel comfortable with Simultaneous Communication, but because non-natural signs are used, Deaf people often find Simultaneous Communication hard to access (Lane et al. 1996: 271).



### 2.2.6 The bilingual-bicultural approach to Deaf education

The unnatural systems discussed above have failed Deaf Education, which led to a re-emphasis on sign language that develop naturally, over time, to serve as foundation from which to teach literacy (Schick, Marschark and Spencer 2006), as was the case before the Milan Convention. I will now review the literature on using sign language to enable literacy acquisition by deaf children, also referred to as the “bilingual-bicultural approach”. In this educational method, deafness is seen not as a medical issue but as a cultural issue. In the bilingual-bicultural program, it is advocated that children who are deaf be taught sign language (ASL, BSL, FSL, SASL or whatever the sign language of the community is) as a L1, and only then be taught the written and/or spoken language used in the community, as a L2 or language of literacy. Bilingual-bicultural programs emphasise that, for example, English and ASL are equal languages, and they work to help children develop age-appropriate levels of fluency in both languages. The bilingual-bicultural approach holds the view that all Deaf learners access information in the classroom visually instead of auditorily. Therefore, classes should be conducted in a completely visual language. Since sign language and spoken language cannot be used simultaneously by one person, for fear of reducing the accuracy and fluency of both, sign language alone is usually used, with no oral language (so-called “voice-off sign language”) (Daniels 1997: 113).

In the bilingual-bicultural approach, a sign language is taught as a native language or L1 of Deaf children and a national language as written language. The spoken/written language (of the specific community) is thus taught as a L2. The languages are taught and used separately, and the structure of the two are “kept apart” in the sense that the structure of the one is not presumed to be based on the structure of the other.

It was not until the mid-1980s that the construct of bilingualism began to emerge in some American school systems which embrace the acquisition of ASL as native language and the learning/teaching of English as L2 (Brueggeman 2004). However, some so-called bilingual programs continue to ignore the strengths of the visually orientated deaf learner and teach English according to traditional and monolingual oral/aural methodologies. This emphasis on

language over literacy translated into language lessons and activities that are largely devoid of meaning for deaf learners (Brueggeman 2004).

## **2.3 Literacy acquisition among Deaf learners**

Although the term “literacy” encompasses more than reading, only reading will be discussed here, because reading was the focus of the current study. Reading is a skill which draws upon a collection of cognitive abilities, including memory and linguistic ability (see Adams 1990; Gathercole and Baddeley 1993). Seeing that phonics instruction is one of the core components of reading instruction in hearing contexts, phonics instruction in Deaf education will be discussed below. Thereafter, I will discuss the development of reading skills of Deaf learners in general, and then I will conclude with reference to the South African context.

### **2.3.1 The role of phonics in the reading process of Deaf learners**

Phonics pertains to the relationship between sounds and their spellings. The goal of phonics instruction is to teach students the most common sound-spelling relationships so that they can decode (or sound out) new written words that they encounter or, in phonics terms, blend the sound-spelling patterns. This decoding ability is a crucial element in reading success in hearing learners (Hoover and Gough 1990) decoding words aids in the development of word recognition, which in turn increases reading fluency. Reading fluency improves reading comprehension because when students no longer struggle with decoding individual words, they can concentrate on making meaning from the text (Hoover and Gough 1990: 128.)

Since it focuses on the spoken and written units within words, phonics instruction is a sub-lexical approach. It is often contrasted with whole language instruction, which is a bottom-up strategy for teaching reading (Hoover and Gough 1990: 130). Phonics is a method for teaching reading and writing of spoken language by developing learners’ phonemic awareness. The ability to hear, identify, and manipulate phonemes, in order to teach the correspondence between sounds and the graphemes that represent them, are paramount in manipulating phonics. The question arises as to whether phonics is important in the teaching of reading to Deaf learners.

It appears that Deaf children, instead of learning phonetically, can “map” written words onto signs (Hartmann, n.d.). Deaf children with good signing skills (which not all of them have) can for instance match the written word *where* with the sign for WHERE. Some profoundly deaf individuals do learn to read as proficiently as their normally hearing peers (Goldin-Meadow and Mayberry 2001: 221-228). The question arises as to how it is possible to learn to read without a firm understanding of the phonological code upon which the print system is based. In this regard, note that the best profoundly deaf readers are not necessarily those who have received the most intensive oral training (Hanson and Fowlers 1987: 206; Waters and Doehring 1990: 351). One might have hypothesised that oral training would promote understanding of the phonological code which, in turn, would promote good reading skills. However, there is no conclusive evidence to support such a hypothesis. For example, Miller (1997) found that deaf sixth graders educated via speech showed levels of phonemic awareness that were no better than those attained by Deaf children educated via sign. Moreover, unlike hearing readers, orally trained deaf children do not always use phonological information in reading tasks. For example, Waters and Doehring (1990) found that a group of orally trained, school-aged deaf children did not use phonological information in word recognition tasks, and Nemeth (1992) found that a group of orally trained, deaf high school learners did not use phonological information on a pseudo-homophone task, despite the fact that they were good readers. Confounding the issue further, Hanson and Fowler (1987) found that college-aged Deaf students who knew and used sign language (and not speech) did use phonological information in word rhyming tasks. It is clear that profound deafness does not preclude the development of phonological processes. However, it is unclear what conditions lead to the development and deployment of these processes in profoundly deaf children. In addition, having acquired phonological skills, deaf children may find them less useful than they are for hearing children. For example, phonological decoding helps hearing children in the early stages of reading to “sound out” words that they recognise orally but do not yet recognise in print. However, decoding printed words phonologically is of little value if the profoundly deaf child does not know the word in the first place (cf. Lederberg, Prezbindowski and Spencer 2000; Waters and Doehring 1990). Thus, even when profoundly deaf children do have knowledge of the phonological patterns that underlie orthographic patterns, this knowledge may not serve the same functions during reading than it does for hearing readers (Chamberlain and Mayberry 2000; Goldin-Meadow and Mayberry 2001).

### 2.3.2 The development of reading skills of Deaf learners

Deaf children necessarily learn to read in their L2 as sign languages are not written languages. As stated in section 1.1, the reading skills of Deaf school leavers in America are significantly below that of their hearing peers, and, in South Africa, the average reading skills of Deaf school leavers in the language of literacy is at Grade 3 level.

As discussed above, hearing children learn to read by making the connection between the spoken language they have learned and the printed words they see. These children use the knowledge they gain about phonics to decode words and then use their knowledge of the world gained from listening and speaking to help make the connection between the printed word and what it represents. This is called “print-sound mapping”. Like hearing children, deaf children need a language to draw from when learning to read.<sup>16</sup> They too have to make a connection between a signed word (in some cases a spoken word) and a printed word. Research shows that to be good readers, students must bring a substantial body of background knowledge to the task (Lane et al. 1996: 280).<sup>17</sup> This will include knowledge of the rules of the language in which the text is written

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<sup>16</sup> No matter what type of reading or educational intervention a deaf child receives, it is important that deaf children do acquire a language. Like hearing children, deaf children need a language that they can draw from for understanding and expression, especially during the process of learning to read. Most deaf children are born into hearing families: In Europe and North America, about 1 in 1000 children is born deaf, but fewer than 1 in 20 deaf children are born to deaf parents (Wrigley 1996). Deaf children born to hearing parents are often disadvantaged by the fact that they are not exposed to a fluently-spoken language in an accessible form – they cannot access the spoken language of their parents, and their parents are not fluent users of sign language – and thus do not develop age appropriate language during the preschool years. This is not the case for deaf children born to deaf parents; if their parents sign, they are constantly exposed to a fluent and accessible form of language. As stated by Brueggeman (2004: 144), “influential research in the 1980’s found that deaf children with early ASL access reached the same linguistic milestones in their native ASL acquisition and development as did their hearing counterparts in English”. (In this regard, see Caselli 1983; Newport and Meier 1985.)

<sup>17</sup> In this regard, I quote Lane et al. (1996: 296): “What is ... surprising, at least at first, is that English fluency [i.e., fluency in the L2, the language of literacy –MAS] gains by this detour through the child’s best language [in this case ASL- MAS], even though the detour takes time away from practicing English. A paradox? Not really. For students to make progress in learning English as a second language, the input must be understandable. And the greatest aid to understanding messages is the background knowledge.”

and, as stated above, a considerable knowledge of life and the world in general. To encode the aforementioned language is needed.

Research on the reading abilities of deaf children reveals that two of the reasons why they have difficulty learning how to read in a spoken language are (i) their lack of knowledge of such language's structure, and (ii) the fact that they have trouble integrating information from the past and using it in devising predictive and generalisable strategies for understanding print (Lane et al. 1996: 280). Deaf children are said to lack these basic abilities because of a lack of exposure to background knowledge<sup>18</sup> (Lane et al. 1996: 280). This lack appears to result from (i) ineffective instruction at school; (ii) excessive time devoted to oral skills and English grammar and vocabulary rather than background knowledge, and (iii) growing up with little access to language at home and in school (Lane et al. 1996: 280, 281). Note in this regard that some Deaf children enter school without a L1 because they have been deprived of accessible language input up until that time. Those who do have a native language are often not understood at school by the hearing teacher. This then poses a challenge to both groups in terms of the child's mastery of a L2 and of L2 literacy. Deaf children of Deaf parents, i.e., those Deaf children who enter school with a well-developed language, tend to be better readers than deaf children of hearing parents (Lane et al. 1996: 284).<sup>19</sup> Indeed, fluency in a sign language is a predictor of reading level: Several studies have shown that the Deaf students who were the most proficient in ASL, not the ones who received the most oral training, were the better readers (Goldin-Meadow and Mayberry 2001).

According to Lane et al. (1996: 287), Deaf readers use strategies other than the alphabetic principle to read, such as associating signs from their sign language with printed words, and even associating meanings directly with the shapes of words. Interestingly, child ASL users sometimes confuse a written word for one of which the ASL sign is similar to that of the written word. For instance, the ASL signs for *vote* and *tea* are similar, and child ASL readers may sometimes interpret *vote* as "tea" or vice versa. This is comparable to hearing children confusing *its* and *it's*.

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<sup>18</sup> Learning how to talk about matters in decontextualised or unnatural setting is an important part of this background knowledge.

<sup>19</sup> This is due to the fact that deaf parents provide a strong social and emotional network and may immediately have access to the necessary resources for their child. Deaf parents more accurately anticipate the needs of their child, having been through the same experience, than hearing parents do.

Deaf signing families appear to make use of repertoires of effective strategies that establish in the motivated learner not only native ASL, but also the foundations for literacy attainment in the spoken language. These repertoires include the use of fingerspelling, ways of combining sign and print, pointing, facial markings and other visual strategies<sup>20</sup> (Humphries and MacDougall 1999/2000; Kelly 1991; Padden and Ramsey 1998, 2000). Deaf participants who possess good reading skills described themselves as avid readers and writers from an early age, whose constant reading led to better writing (Brueggemann 2004: 147).

### **2.3.3 The situation in South Africa**

In South Africa, the general mainstream education policy is one of orally based inclusive education for also the deaf – even for deaf learners with special needs – in public schools. In White Paper 6 on Inclusive Education (Department of Basic Education, 2015), it is reported that in 2014 there were 6503 Deaf learners, 28 Deaf-blind learners and 1239 hard-of-hearing learners in public special schools in South Africa. Statistics for learners with special educational needs enrolled in public mainstream schools in 2014 are not available, but the relevant 2013 statistics are as follows: 465 deaf learners, 86 deaf-blind learners and 3075 hard-of-hearing learners. This amounts to 7770 Deaf-related learners in special schools versus 3626 in mainstream schools. The latter have a spoken language as LOLT, and some special schools for the Deaf follow an oral-aural approach in which sign language is not employed at all, resulting in not all learners in schools for the Deaf having access to SASL. A major challenge in providing education to the deaf child is that the ordinary (that is, hearing) teacher is typically not equipped during training for effectively communicating with and teaching literacy skills to deaf learners. The focus on speech therapy to encourage (or compel) deaf learners to speak and communicate “normally” also

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<sup>20</sup> In this regard, consider the following case: Christina Hartmann, a profoundly deaf person since birth who started learning sign language when she was 6 months old, states that her mother exposed her to sign language but also to the written word. According to Hartmann, this led to her being able to read with understanding at a very early age: “I think that, through fingerspelling, my mother signing stories to me, and the closed captions somehow I realized that the printed word meant the same thing as signs and fingerspelled words.” Later, Hartmann received a cochlear implant. Although she then could “hear”, she never made use of phonics to read (Hartmann, n.d.).

does not address the unique challenges deaf learners face in communication and literacy acquisition.

For those deaf learners accommodated outside the traditional mainstream education system in one of the 47 dedicated provincially run Early Learning Special Educational Needs (ELSEN) Schools for the Deaf and Hearing Impaired,<sup>21</sup> the predominant approach is still one of rehabilitation rather than habilitation. In practice, sign language (the ostensible main medium of the education of the deaf at such schools) is not effectively employed, with only 14% of the educators being fluent in sign language. Teachers thus employ teaching methods designed for hearing learners when teaching deaf learners to read. This may be one of the main reasons why the majority of South African deaf learners do not attain even Grade 4 reading levels.

## 2.4 Conclusion

Goldin-Meadow and Mayberry (2001), in a comparative study between deaf children of deaf parents and deaf children of hearing parents, concluded that the former are better readers than the latter. As stated in section 1.1, the research result of the Goldin-Meadow and Mayberry study of 2001 confirm that robust L1 language skills are one of the keys to learning to read, and that children need language on which to map the printed code. Children thus need a “natural language”, whether spoken or signed, to form the base from which literacy is taught. In *Deaf children learning to read*, Goldin-Meadow and Mayberry (2001) state that children who have no language on which to map the printed code never learn to read. All the above being said, some deaf people struggle to read at grade level. I suspect it is not because of their deafness per se, but the inadequacy of their educational environment. This study aims to indicate how instruction can best be used to turn signers into readers. Specifically, I will determine how SASL skills and L2 reading skills develop over the course of exposure to SASL in a small group of profoundly deaf but otherwise diverse young learners. The next chapter provides detailed information on the curriculum that was followed to teach these learners SASL and reading skills.

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<sup>21</sup> Note that only a few of these special schools provide tuition up to Grade 12.

## Chapter 3

### The South African Sign Language curriculum pilot project

#### 3.1 General purpose of and background to the SASL curriculum pilot project

The SASL curriculum pilot project aimed to determine how SASL could be introduced and maintained as a school subject, and to test a draft SASL curriculum. During her budget speech in 2010, Ms Helen Zille, Premier of the Western Cape, requested that the Western Cape Education Department pilot SASL in the General Education and Training band. This band comprises the Foundation Phase (Grades R to 3), Intermediate Phase (Grades 4 to 6) and Senior Phase (Grades 7 to 9). The pilot was introduced by the Western Cape Education Department in order to afford Deaf learners in the province the opportunity to access SASL as a school subject. Although SASL had been accepted as LoLT in schools for the Deaf, it had never been offered as a school subject, which denied Deaf learners the opportunity of mastering and gaining formal knowledge on the grammar and linguistics of their L1. As stated in Section 1.1, the court case of a deaf Grade 12 learner of KwaZulu Natal who sued the Department of Education for not making it possible for him to study SASL as home language up to matric received national attention. The Western Cape Education Department took action after the court case, requesting the piloting of the SASL curriculum<sup>22</sup> in one school (namely De la Bat School for the Deaf in Worcester) as

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<sup>22</sup> A note on the history of the pilot SASL curriculum: A SASL curriculum was developed from 2005 onwards by a five-member Free State task team. The team, of which I was a member (as stated in section 1.1), followed the Outcomes Based Education (OBE) Home Language guidelines while developing the SASL curriculum, as OBE was the system employed in South African schools at the time. At the end of 2008, the curriculum had been completed for Grades R to 9. In 2009, when the Kyle Springate court case alerted the whole country to the fact that SASL had to be introduced as a school subject, the Western Cape Education Department invited the Free State task team to join forces with them to finish the curriculum up to Grade 12. The completed curriculum (Grades R to 9) that was developed by the Free State Team was tabled to the WCED and was accepted as is. Due to a joint effort by Free State and the Western Cape (in which I participated), the rest of the curriculum (Grades 10 to 12) was completed at the end of 2009. It was this curriculum (partly developed by the Free State task team and partly by a joint Free State-Western Cape task team) that the WCED requested to be piloted. The said SASL OBE draft curriculum was piloted at De la Bat School. In 2011, the SASL CAPS Curriculum for the



from 2011, with the aim of establishing SASL as subject in schools for the Deaf throughout the province should the pilot project prove to be successful. I was appointed as project leader and was given the latitude to assemble a team to work with me on the project.

The SASL curriculum pilot project was launched in January 2011, after careful planning in the last term of 2010. According to this planning, implementation of the curriculum was to be piloted in Grades 1 to 3 only. The research team however soon realised that the implementation of the SASL curriculum could be fast tracked, and they therefore decided to implement the curriculum as indicated in Table 3.1.

*Table 3.1. Implementation of the SASL Home Language curriculum*

<b>Year</b>	<b>Phase</b>	<b>Grade</b>	<b>% of notional time</b>
2011	Nursery School Phase	Pre-Grade 0, Grade 0, Grade R	100% of prescribed time
2011	Foundation Phase	Grade 1 to 3	100% of prescribed time
2011	Intermediate Phase	Grade 4 – 6	80% of prescribed time
2011	Senior Phase	Grade 7 – 9	40% of prescribed time
2011	Further Education and Training	Grade 10 – 12	40% of prescribed time
2011	Skill Development	Skills Development	40% of prescribed time

This means that learners in each grade offered in De la Bat School for the Deaf was exposed to SASL as subject in 2011, 2012 and 2013. Notional time is the time set aside for each learning area which should appear on the time table per week. As set out above, Grades R to 3 were taught SASL on Home Language level for exactly the amount of time prescribed for Home Language in the Outcomes Based Education (OBE) curriculum. From Grades 4 to 12 and in the Skills Development stream, this was not possible, because SASL periods had to be fitted into an already congested time table; these periods were added to the existing periods, and it was not possible to fit a full extra subject into the time table amongst all the subjects obligatory in the OBE curriculum. This was especially the case from Grade 7 onwards. However, SASL Home

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Foundation Phase and Grade 9 (Bridging Curriculum) had been finalised. The obvious course of action for the piloting team then was to change from the SASL OBE to the SASL CAPS curriculum, especially as the content of two was very much the same.

Language implementation from Grade R to Grade 12 created a culture of SASL use throughout the school,<sup>23</sup> and this influenced the pilot positively. Although data is available for all grades, the data reported on in this thesis are those collected longitudinally in 2011 to 2013 in the Nursery School and Foundation Phases.

### **3.2 Specific objectives of the SASL curriculum pilot project**

The specific objectives of the SASL curriculum pilot project were as follows:

- (i) Implementing the draft SASL curriculum in the General Education and Training Band.
- (ii) Developing knowledge and understanding of the linguistics of SASL amongst teachers of the Deaf and among Deaf learners alike.
- (iii) Developing the SASL communication skills<sup>24</sup> of learners, parents and staff (teachers, classroom assistants, hostel staff, student therapists, pastoral workers and general workers).
- (iv) Developing awareness of SASL as language in learners, parents, staff and the general public.
- (v) Developing cultural awareness for SASL in learners, parents, staff and the general public.
- (vi) Developing learners' knowledge and skills in the literature of SASL.
- (vii) Developing and evaluating assessment strategies and techniques for learners who use SASL as language of assessment.
- (viii) Establishing the feasibility of using the SASL curriculum in schools for the Deaf nationwide.

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<sup>23</sup> That said, the learners in the intermediate and senior phases were accustomed to having to use Signed Exact Afrikaans or Signed Exact English for school purposes and to using SASL on the playground and in the hostel only, and it was not an easy task to change these habits.

<sup>24</sup> Although the mandate from the Premier was to pilot the SASL-as-subject curriculum, the research team soon after initiating implementation realised that this pilot project can reach further than only implementing SASL as a school subject. As SASL should form the cornerstone of Deaf Education, the following needs were identified and addressed during the project: training staff (including new teachers, general assistants and hostel parents) and learners' parents in SASL; retraining those teachers already in the system who were still using Sign Supported Language instead of SASL, and vocabulary and terminology development and standardisation (see section 3.4).

### **3.3 Personnel involved in the SASL curriculum pilot project**

The research team referred to in section 3.1 responsible for implementing the SASL curriculum on a pilot basis consisted of (i) teachers (deaf or hearing but fluent in SASL) who implemented the curriculum in the classrooms; (ii) Deaf teaching assistants with the dual role of working with the teacher in class and serving as SASL role model for the learners; (iii) administrative staff to develop learning and teaching support material for use during the implementation of the curriculum; (iv) an illustrator to create pictures for the material; (v) a technical assistant; and (vi) a diverse team of SASL-using consultants who met on a weekly basis to do vocabulary and terminology development.

### **3.4 The development of learning and teaching material**

The problem with which the research team was faced was that a curriculum had to be implemented and tested without any learning and teaching support material (LTSM) with which to do so. The challenge, which was met successfully by the team, thus was to develop, edit and produce specific types and grade levels of LTSM before reaching that stage of implementation of the curriculum where the curriculum required said specific LTSM.

The following categories of LTSM were developed:

- (i) Theme-based vocabulary books and DVDs for language acquisition, to be used for teaching in school. (Note that regional variation in the language – specifically as pertains to the signs – was respected throughout this project.)
- (ii) Card games for teaching vocabulary.
- (iii) Signed stories on DVD with an accompanying picture book.
- (iv) The same picture book as mentioned in (iii) above, with captions in Afrikaans and English, to be used in the Afrikaans or English period.
- (v) Worksheets to practice aspects of SASL grammar, as far as possible only in schematic or picture form, as SASL does not have a written form.
- (vi) Signed comprehension tests.
- (vii) Signed literature.

Examples of some of the LTSMs mentioned above are provided in Figure 3.1 below. I return to some of these LTSM types in the next section, where I discuss the general contents of the curriculum and illustrate how the developed LTSMs were used to develop the skills targeted by the SASL curriculum.



Figure 3.1. Examples of (top row) picture books (with and without Afrikaans and English captions) with accompanying DVDs and (bottom row left to right) card games, worksheets, and signed comprehension tests

### 3.5 General content of the CAPS SASL curriculum

The skills outlined in the CAPS SASL Home Language curriculum are in accordance with those in the CAPS English Home Language curriculum and are presented in Table 3.2.

Development of the first three language skills commences in Grade R, and these skills are taught explicitly in all grades. The last two skills, although not taught explicitly, receive attention incidentally in pre-Grade R, Grade R and Grade 1. Phonological awareness is explicitly taught from Grade 2 onwards. Language Structure and Use is only formally taught as from Grade 4. However, throughout the pilot, we taught basic language structure and use from Grade 1 onward, with great success.

*Table 3.2. Outline of the content of the CAPS SASL curriculum*

<b>CAPS SASL Home Language</b>	<b>Description</b>
Observing and Signing	The learner is required to sign a variety of signed texts live (i.e., face-to-face signing takes place)
Visual Reading and Viewing	The learner views and reads recorded SASL material
Recording	Signed texts are recorded and presented by learners
Phonological Awareness (working with parameters)	Note that there is a distinction between spoken and sign language phonology; the former deals with phonemes or sounds and the latter with parameters
Language Structure and Use	From the Intermediate to the Further Education and Training Phase. (In the Foundation Phase, this skill is integrated in the other skills and is thus not taught separately)

In the pre-school (pre-Grade 1) phase, the curriculum focuses on very basic language acquisition. As stated before, many deaf children of hearing parents enter this phase having had no exposure to sign language and thus having no language at all, because their hearing is not sufficient to access spoken language.<sup>25</sup> For this reason, the research team decided that one ought not to wait until Grade R to commence vocabulary building; rather, vocabulary building started in pre-Grade R as early as 3 years of age and was the main focus during the pre-Grade 1 phase. In the pre-school phase, children are afforded the opportunity to make the connection between the sign and the object or concept to which it refers. During the pilot, DVDs with vocabulary used in the SASL class were distributed to all classes, and teachers, class assistants and hostel staff learnt and used the same correctly formed vocabulary in order to ensure that learners received maximal exposure to these vocabulary items. We did not rely on natural exposure only; vocabulary items were also deliberately taught to learners in the pre-school phase. To this end, (i) pictures were labeled with signs (so that learners were required to link signs to pictures); (ii) games were played so that vocabulary building could take place through play, including matching games in which signs and pictures were paired off; and (iii) learners were exposed to animated signed stories.

Syntax cannot be taught in the same manner: Children do not always hear or see a sentence before they can produce such a sentence, as humans are all born with a language acquisition

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<sup>25</sup> Despite not being able to hear language, Deaf children (especially those of hearing parents) are often encouraged to use their voices when communicating.

device which assists in the acquisition of syntax and enables us to produce novel utterances (i.e., sentences that we have not heard or seen before). In order for this to occur, the child must have (i) access to the language to be acquired; (ii) exposure to language early in life; (iii) accessible proficient language role models, and (iv) interaction with other language users. When children acquiring a language have contact with other children acquiring the same language, they can develop the ability, through play, to share, settle conflicts, compromise, collaborate and conform (Steward and Clarke 2003:31). Newport and her colleagues (1990) found that Deaf adults who acquired sign language early in life are able to make consistent judgement of sign language morphology in contrast to those Deaf adults who acquired sign language later in life, supporting the notion that native competence in a natural language requires exposure to the language during the first few years of life.<sup>26</sup> The effect extends to other, non-linguistic cognitive skills, with those with earlier exposure to sign language being likely to perform better on a variety of measures of cognitive skills (including memory and sequencing) than those who were exposed to their primary language later in their childhood (Mayberry and Fischer 1989). With the above in mind, the pilot and the curriculum required learners in the first few years in pre-school to be immersed in SASL, surrounded by proficient SASL role models as far as possible.<sup>27</sup>

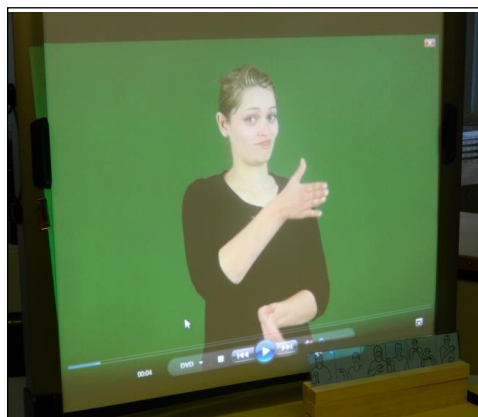
Furthermore, the learners were exposed to recorded signed stories (see Figure 3.2 below) that were written, illustrated and signed by Deaf role models who understood Deaf culture and drew from it when conceptualising the stories. The characters in the stories were Didi, a Deaf girl who wears hearing aids; her twin brother, Dudu who has no hearing loss but knows SASL and grow up as a CODA (child of Deaf adults); and Mom and Dad who are both Deaf. The experiences of

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<sup>26</sup> Deaf children who are exposed to an accessible language (i.e., a sign language) at varying ages show varying degrees of mastery of language as they age, with early learners far outperforming late learners overall (Newport and Supalla 1987; Johnson and Newport 1989; Newport 1990, 1991; Boyes Braem 1999).

<sup>27</sup> Learning an L1 such as sign language with consistent exposure to proficient primary language models has been identified as one of the best practices in supporting literacy development among children who are Deaf and hard-of-hearing (Easterbrooks and Stephenson 2006). Strategies that support deaf children to learn sign language prior to the introduction of spoken language are considered respectful to Deaf culture, and they foster ownership by helping students develop pride and identity in their deafhood (Enns 2007; Wilbur 2000). The evidence supports the use of a bilingual educational approach that promotes the use of a learner's L1 to develop skills in the learner's L2 (Tomaszewski 2001).

Didi and Dudu correlated with experiences from the learners' own lives.<sup>28</sup> For example, in the story *Didi goes to school*, Didi is dealing with her fear of possibly not being understood by her teacher when she goes to school for the first time. At school, she is overjoyed to discover that the teacher knows SASL and that the rest of the class all are deaf. Some of these stories are “animated”, as the characters are moving (e.g. brushing their teeth or signing) while the signer is signing the story in a block elsewhere on the screen. This makes it possible for learners to watch the story while “reading” the signer. The vocabulary used in the story comprised the signs used in the vocabulary building theme for the week. Learners acquired the grammar from the role model signing the story, without explicit grammar teaching. From this incidental learning, they constructed their own sentences and were able to (i) converse about their own experiences, (ii) retell the stories with great precision and (iii) arrange picture sequences based on the stories in the correct order.



*Figure 3.2. A Deaf role model signing a story*

### **3.6 Specific language skills targeted by the SASL curriculum in the Foundation Phase**

The three skills that receive deliberate instruction in Grade R are discussed below. These are Observing and Signing, Visual Reading and Viewing, and Recording.

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<sup>28</sup> Learners appeared to relate to Didi and Dudu. In one instance, an older pre-school girl was asked to pray in class during the early morning circle, and she included Didi in her prayers when doing so. This serves as anecdotal evidence that learners felt an affinity towards the characters in the stories.

### 3.6.1 Observing and Signing

For Observing and Signing, activities are done with live (face-to-face) signing as opposed to recorded signed texts. Learners are constantly developing their observing and signing skills not only in each of the components of language, but also during other subjects. Because observing and signing are essential to all learning for SASL users, it is important that these skills are effectively developed early in a Deaf child's academic life. Hence, in the Foundation Phase, time is specifically dedicated to the development of these two important skills. The time allocated to this skill is spent on activities that target specific skills at least twice a week. These Observing and Signing activities are as follows:

- (i) observing and signing greetings, introductions and name-signs, and using appropriate attention-getting strategies,
- (ii) paying attention to simple questions and announcements, and responding appropriately,
- (iii) observing simple instructions and acting on them,
- (iv) observing without interrupting,
- (v) observing short signed stories with enjoyment, and joining in choruses where appropriate,
- (vi) signing simple signed rhymes and doing the actions,
- (vii) observing and recalling simple sign sequences, starting with three signs and building up to four or more signs so that visual memory is developed,
- (viii) signing about pictures in, for example, posters, theme charts and books (related to a minimum of five themes per term), and
- (ix) "telling" stories, and "retelling" stories of others in their own way.

SASL is used to develop concepts in all subjects (for instance to understand concepts such as shape, colour and sequence) and to think and reason. Concerning the latter, SASL was used to:

- (i) identify and describe similarities and differences,
- (ii) match things that go together, and compare things that are different,
- (iii) group familiar items, e.g. putting all the toys in the box, books on the shelf and crayons in the tin, or sort according to colour, and
- (iv) identify parts of a whole, e.g. naming and pointing to parts of a house.



SASL was also used to investigate and explore by asking questions and giving explanations. In terms of processing information, learners were required to pick out selected information from a signed description. They had to use visual and pictorial cues to make meaning, specifically to

- (i) recognise and point out common objects in pictures,
- (ii) participate in activities to perceive objects in the foreground and the background and to separate them meaningfully, e.g. finding an image in a busy or detailed picture,
- (iii) play games such as “Where is it?”, finding an object hidden in a classroom among other items,
- (iv) group identical objects/pictures together,
- (v) view near identical objects/pictures, select the one that is different and explain why it is different,
- (vi) arrange a set of three pictures in such a way that they form a story and a logical sequence of events, and then sign the story created by the pictures,
- (vii) play memory games, and
- (viii) complete puzzles.

### **3.6.2 Visual Reading and Viewing**

As can be seen from the above, there was an emphasis on visual activities. This emphasis was deliberate, given that SASL is a language that must be seen to be understood; therefore the daily activities had to develop learners’ visual perception and discrimination. Daily Visual Reading activities included making use of the DVD cover or pictures to predict what the story is about, collecting and “reading” logos from the learners’ everyday environment, discussing handling and care of DVDs and video equipment, and observing and discussing stories and other signed texts presented to them. The class also participated in shared visual reading, reading with the teacher pre-recorded texts such as class stories and poems developed in shared recording sessions. The whole class also “read” the same signed story.

Visual reading is not to be mistaken for reading books. “Visual reading” is the term used for watching a pre-recorded SASL text. Such a text can be watched several times, e.g. first for enjoyment and to give learners an opportunity for a personal response to the text; next to “read”

the text with the teacher, with the teacher discussing the text in order to develop vocabulary, comprehension and text structures (the latter referring to grammar and SASL conventions); and lastly for individual “reading” by the learners themselves after which they engage in signed, practical and recorded activities based on the recorded text.

Regarding the emergent literacy skills of the **pre-Grade R and Grade R** learners, they were required to

- (i) distinguish between the shapes of objects that are the same, sequence pictures, and identify the picture that is different to the rest,
- (ii) use sequencing skills to order three pictures and relate the story created,
- (iii) recall items seen such as shapes of concrete objects,
- (iv) build puzzles and complete pictures,
- (v) hold a picture book with the correct orientation and page through it correctly,
- (vi) make up their own story by “reading” pictures in a picture book, and
- (vii) recognise their own name-signs and those of at least five other learners in their class.

During shared visual reading, learners “read” simple signed stories with their teacher, discussed and described the characters in the stories, drew pictures capturing the main ideas in the stories, sequence pictures in a story, and respond to stories through movement and drama activities. Independent visual reading entailed “reading” signed texts from a DVD independently for pleasure.

For **Grade 1** learners, daily or weekly activities in all areas of SASL (as for the pre-Grade R and Grade R learners) included observing and signing greetings, introductions and name-signs; using appropriate attention getting strategies; observe without interrupting; and signing about personal experiences. Twice weekly observing and signing activities included.

- (i) observing simple instructions (related to classroom routines) and responding to these appropriately,
- (ii) observing stories with interest and acting out parts of the story,
- (iii) answering questions, such as those related to personal details,

- (iv) sequence pictures about a story and communicating through “retelling” the sequence of ideas,
- (v) signing about pictures,
- (vi) participating in discussions while taking turns to sign and respecting others in the group, and
- (vii) describing objects in terms of, for example, colour, size or shape using the correct vocabulary.

Learners are also now introduced very subtly to language rules and grammar which has started to be established naturally during the preschool years. These rules are not taught explicitly as the foundation has been laid naturally through observing SASL-using role models in the preschool phase.

### **3.6.3 Recording**

The process of recording involves learners planning/pre-recording, drafting (recording), revising, editing, final recording and publishing texts for others to “read” (see Figure 3.3). In the pre-recording phase, learners draw or paint pictures to convey messages during creative art activities, e.g. about a personal experience, or they contribute ideas for a class news program by means of drawings. In the recording phase, learners are recorded while role-playing or signing their experiences. They are also required to explain real life situations from photos, e.g. when shown a photo of a man with an umbrella being swept away by the wind, learners would be required to add intensifiers by using correct facial expression while being recorded. Learners may also use webcams to record themselves, after which they edit their own recordings before presenting them to the class.



*Figure 3.3. From top left to bottom right: Detailed drawing of a personal experience; signing about a personal experience after drawing it; role playing the experience of a bus trip undertaken during an outing; commenting on photos while being recorded; recording with a webcam*

### **3.7 Bilingual approach followed in the SASL curriculum to facilitate reading in Afrikaans (L2)**

In the Foundation Phase, the vocabulary building that commenced in the preschool phase continues, but with a focus on bridging between SASL and the spoken language. The aim is to lay a firm foundation in SASL before bridging to the written word. Such a foundation in SASL is imperative before presenting Deaf children with formal reading tasks, so that they will be able to read with comprehension. The acquisition of reading vocabulary is a challenge for Deaf children in bilingual education programs, because they have restricted access to the spoken language (which is to become their L2 and language of literacy) as a result of their hearing impairment. Furthermore, as already stated, many Deaf children have limited sign language input as their parents, family members, and teachers usually do not have fluent signing skills. At early ages, many deaf children of hearing parents will be delayed in the acquisition of sign language (Spencer and Harris 2005, as cited in Hermans, Knoors, Ormel and Verhoefen 2007:155). In

other words, setting up a bilingual system is much more difficult for deaf children. This means that while some Deaf children are still in the process of acquiring both their signed and a spoken language, they have to start learning to read (yet another language skill) in their L2. Several studies have found that deaf children lag far behind their hearing peers in terms of reading (Lane et al. 1996: 280, Steward and Clarke 2003: 144). Reading is a process that is dependent on the language that provides the basis of the writing system, especially during the early stages of acquisition (Perfetti and Sandak 2000). Based on the statement by Perfetti and Sandak, the research team realised that Deaf children cannot rely on their spoken language skills when they start learning to read; they first had to have their signing skills developed and then these skills had to be used to assist in the development of reading skills in the L2. We based the approach to reading development in the SASL curriculum on linguistic interdependence (Cummins 1981) which promulgates that the skill developed in the L1 (whether spoken or signed) can be used to acquire the L2.

After a solid foundation in SASL had been laid in the preschool phase, the SASL teacher and the class teacher in Grade 1 now join forces to start bridging from SASL to add Afrikaans (or English) text to the familiar SASL DVDs and wordless storybooks (see Figure 3.4). Hereafter, the story is presented to the child in the form of a series of printed signs, and the child has the opportunity to place the written Afrikaans translation of the sign below each sign (see Figure 3.5). Next, the child is presented with the same storybook, now containing the story in picture form with accompanying Afrikaans text (see Figure 3.6). The signed version of the story is then compared to the Afrikaans version of the story (see Figure 3.7) after which the child is asked to arrange the loose printed Afrikaans words in the correct order.



Figure 3.4. A wordless picture book for use with a signed DVD



Figure 3.5. Providing the sentence in printed SASL form with the correct SASL sign order

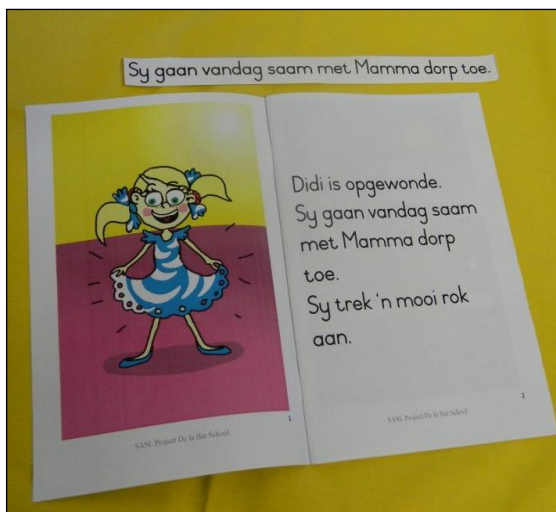


Figure 3.6. The picture book with written text, in this case in Afrikaans



Figure 3.7. Comparing the SASL sentence to written Afrikaans

### 3.8 Objectives met during the SASL curriculum pilot period (January 2011 to October 2013)

During the pilot period, the draft SASL curriculum was successfully implemented in the General Education and Training Band in De la Bat School for the Deaf (Steyn, Cook and SASL Pilot Project Task Team, 2013a). From January 2011 onwards, the draft curriculum was rolled out in

Grades R to 3. In 2012, it had been piloted up to Grade 6 (Intermediate Phase), and in 2013, the roll-out included the Grade 7 learners in the Senior Phase. Instead of introducing the SASL curriculum to one successive grade after the other each year, the whole curriculum was rolled out simultaneously in all phases of the school. The rationale behind this decision was a desire for a “holistic SASL infusion” rather than a limited introduction to SASL, the latter being perceived as a threat to fluidity. The simultaneous roll out appeared to have influenced the attitude of learners and staff towards the implementation of SASL as subject positively Deaf (Steyn et al., 2013a). In this section, I provide a general overview of the observations made during the SASL curriculum pilot project and make general comments on the effect of the implementation of the SASL curriculum. In Chapter 5, I discuss the cases of four individual Deaf learners, providing detailed information on their progress in the acquisition of SASL and reading skills.

The SASL curriculum was found by teachers and learners (where relevant) to have been set out in a coordinated manner and to contain clear and reachable learning outcomes. Most learners had limited knowledge of the linguistics of SASL at the beginning of the SASL curriculum pilot project (Steyn, Cook and SASL Pilot Project Task Team, 2011a), and creative implementation of the curriculum was thus demanded from the staff to overcome learners’ backlog in language acquisition. As mentioned in section 3.4, another challenge to the implementation of the SASL curriculum was a lack of learner and teacher support material. This challenge was overcome by developing suitable material (also see section 3.9 below). The lack of documentation of SASL (i.e., the lack of a grammar guide) posed yet another challenge, which was overcome by adapting sources on ASL, Auslan and British Sign Language to create such a preliminary grammar guide for SASL. This could be done successfully as SASL shares some features with the other sign languages mentioned above. For instance, there are few differences between question formation in SASL and British Sign Language. As such, grammatical descriptions of question formation in British Sign Language could be used as point of departure when providing descriptions of question formation in SASL.

Regarding the objective to develop knowledge and understanding of the linguistics of SASL: Through the implementation of the pilot SASL curriculum, the learners could learn and experiment with SASL as a fully-fledged language. Parameters within which a sign is to be

formed (i.e., handshape, hand placement, palm orientation, movement and non-manual features) were mastered and learners demonstrated a conscious application of these parameters. It was found that the syntax of the SASL spoken by older learners had been greatly influenced by the Manually Coded Language (spoken Afrikaans or spoken English), and that this frequently led to miscommunication. The older learners had to do rote learning of the syntactic rules of SASL, a lack of which restricted their expressive skills in SASL. Younger learners, by contrast, were exposed to SASL on admission to the school and mastered SASL syntax. This led to more fluency and better developed expressive language (Steyn et al., 2013a).

The communicative skills in SASL of learners, staff<sup>29</sup> and parents were developed. Learners' receptive and expressive language improved, as well as their accuracy between thoughts and expression (Steyn et al., 2013a). Younger learners (amongst whom those with limited previous exposure to SASL) started to use the language skillfully and creatively (Steyn et al., 2011a). SASL training sensitised staff members to the correct use of the grammar of SASL as well as to sign language linguistics. They came to acknowledge SASL as a fully-fledged language with its own grammar, independent of that of a spoken language. The development of subject terminology and vocabulary (see section 3.4 and 3.9) appeared to enhance the quality of the

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<sup>29</sup> Newport and Supalla (1980) have observed important differences between native and non-native ASL users: Non-native signers do not achieve the same levels of fluency in ASL, especially in the use of complex morphology (cited in Volterra and Erting 1994:3). Furthermore, according to Lane et al. (1996:50), "there is growing evidence that Deaf children pay a penalty in grammatical mastery in sentence processing if their opportunity to learn ASL is delayed, and the greater the delay, the greater the penalty." It was with the above in mind that the research team endeavored to provide the learners involved in the project with as much exposure to SASL as practically possible. The intention was to expose learners to other SASL users, including Deaf sign role models. To the end of increasing the learner's exposure to SASL, we gave SASL training to their teachers and other service providers. Specifically,

- (i) All teachers (both Deaf and hearing) involved in the pilot were expected to gain fluent signing skills.
- (ii) Training in the grammar and linguistics of SASL was provided to all teachers (including the Deaf teachers) (as well as to hostel parents and support staff) on a weekly basis.
- (iii) Every teacher had a Deaf teaching assistant who grew up in a Deaf culture.
- (iv) The teaching assistants were also exposed to SASL grammar and linguistic training.
- (v) Class teachers and their assistants had to accompany their class when the class went for SASL training, so that the vocabulary, grammatical structure etc. could be continued in class.

All of the above was done purposefully, to make sure that learners were exposed to richest language environment possible to try and make up, as far as possible, for their time from birth to 3 or 4 years without exposure to SASL.



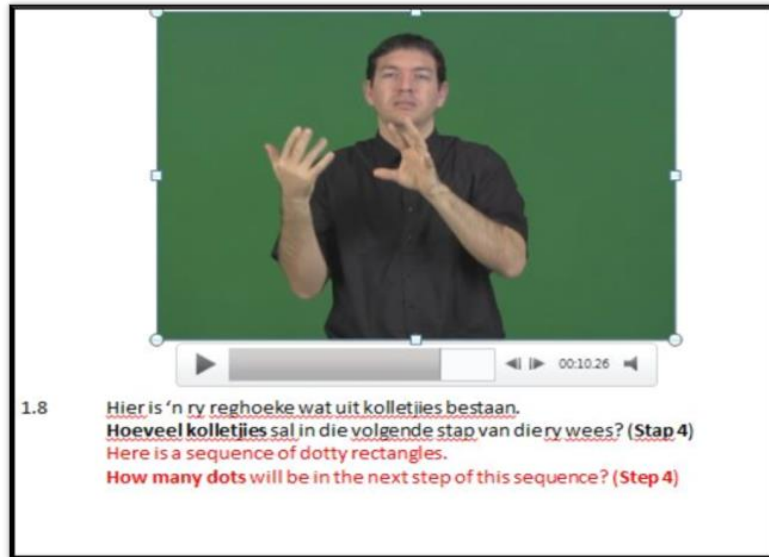
tuition offered by the teachers. A small number of parents attended SASL training. Those who did so testified of improved communication between them and their children (Steyn et al., 2011b). Hostel parents underwent SASL training on a continuous basis.

Regarding the development of cultural awareness, there was a movement amongst learners from ignorance to awareness to pride in their language. The older learners acknowledged that being a SASL user was becoming part of their identity (Steyn et al., 2013a).

Literature in SASL is very limited. This led to literature being developed with characters which portray Deaf culture and with whom Deaf learners can associate. The topics of the stories written were aligned with the themes that were taught in other subjects and referred to experiences within the learners' field of experience. This series of story books is also used as a bridging tool between SASL, on the one hand, and Afrikaans or English (as language of literacy), on the other; as such, they appear in written Afrikaans and English (with the text appearing on the same page as the pictures, as is conventional for written languages) as well as in the form of pictures only (i.e., as wordless picture books) with the SASL text being on a DVD, signed by a Deaf role model who was recorded while signing the story. For learners in the Further Education and Training band, existing literary works in Afrikaans or English were signed (and recorded on DVD) as Deaf learners found the texts very difficult to read and understand because of limited knowledge of the spoken languages in question. The signed versions of these works helped learners to understand the storyline better and cleared up misinterpretation of vocabulary items (Steyn, Cook and SASL Pilot Project Task Team, 2013b).

Alternative assessment strategies and techniques had to be developed and then evaluated. Having users of SASL read their test and examination papers in English or Afrikaans only and then answer said papers in written English or Afrikaans (as was previously the only assessment practice for Deaf learners) entails assessment through the medium of L2 (never through the medium of L1). The SASL curriculum pilot project researched, refined and improved alternative assessment strategies to ensure greater accessibility to Deaf learners who have difficulties in reading and interpreting question papers in their L2. A question paper in power point format with questions written in both Afrikaans and English as well as a signed version thereof were

produced on DVD and tested (see Figure 3.8), with excellent results (Steyn, Cook and SASL Pilot Project Task Team, 2012). Learners answered the question paper on a printed question paper or alternatively in MS Word on the computer.



*Figure 3.8. Example of an adapted question in a question paper for Grade 11 Mathematical Literacy*

This manner of alternative assessment has several advantages: Learners work independently (without the assistance of an interpreter); the pace of progress is learner-determined, and is different for each learner; and it is possible to review the signed version of the paper, as the signed version is pre-recorded (there is no online, real-time translation involved). This form is preferred over live interpreting, as the latter has been shown to be problematic at times: Live interpreting risks subjectivity and is very costly. In addition, the possibility exists that the interpreter might be unavailable on the day of assessment. (This is a problem that is graver in the case of SASL than in the case of spoken languages, as there are very few trained SASL interpreters available.) Furthermore, the live interpreter might not know and understand the subject terminology. The adapted paper enables learners to provide a better reflection of their knowledge – and knowledge per se is assessed, not language competency in the L2. Standardised assessment proved to be objective; there is no chance of a translator changing/adapting the questions online or misinterpreting the question (which would influence the standard of the question paper negatively), as the interpretation is pre-recorded and the recording is reviewed

before it is shown to the learners. This form of alternative assessment provides Deaf learners with access to Annual National Assessments on basis equal to that provided for hearing learners in other languages. In this way, Deaf learners can compete with hearing learners on equal terms.

### 3.9 Benefits to Deaf education accrued from the SASL curriculum pilot project

The SASL curriculum pilot project benefited Deaf education in several ways.<sup>30</sup> The implementation of the SASL curriculum sensitised the school to the fact that SASL is a language in its own right (and not a signed version of a spoken language). Both learners and educators realised the broad world of knowledge that can be opened through sign language. A direct outflow of piloting the draft SASL curriculum was the development of learner and teacher support material used to implement the said curriculum. The story books that were developed for literacy acquisition were mentioned above. In addition to these, 63 theme-based vocabulary books were developed to support the CAPS curriculum in the classroom. Examples of such books are seen in Figure 3.9.



Figure 3.9. A selection of the theme-based vocabulary books developed as learner and teacher support material as part of the SASL curriculum pilot project

<sup>30</sup> The piloting of the SASL curriculum and the use of SASL as LOLT took place in one school only, but the roll-out of the SASL curriculum and SASL as LOLT has since completion of the pilot project taken place in the other four non-oral-aural schools for the Deaf in the Western Cape Province. In these five schools, the effectiveness of the implementation of the SASL curriculum and the use of SASL as LOLT has been measured qualitatively by the Western Cape Education Department in 2013, but no formal report has been released yet. Roll-out in other provinces' schools for the Deaf commenced in 2015 only, and as such there is no written record of the possible benefits accrued by these schools from the SASL CAPS curriculum directly.

Terminology subject books covering 10 areas were also developed. These areas were Mathematics (Senior and Foundation Phases), Technology, Nutrition, Social Sciences, Consumer studies, Computer Application Technology, Art, Needlework, and Economic and Management Sciences. Some of these terminology books are shown in Figure 3.10. The development of these terminology books led to the standardisation of signs throughout the school. Newly appointed teachers could also learn the relevant signs from the DVD.



*Figure 3.10. A selection of the terminology books developed as learner and teacher support material as part of the SASL curriculum pilot project*

Standardisation of vocabulary and subject terminology was a direct (yet unintended) result of this effort. This impacted the standard and pace of teaching at De la Bat School as, for the first time in the school's history, the same signs were used throughout the school. The development of vocabulary, subject terminology as well as learner and teacher support material has as outflow an extended body of knowledge that is presented to the learners. Educators also reported being more confident in their presentations.

The literature (specifically the story books) developed for SASL extended into the language classes where the bridging from SASL to the written word took place. Improving the literacy skills of Deaf learners through a bilingual approach is a major step forward in Deaf education in South Africa, given the generally low reading levels usually observed in Deaf learners (see section 2.2.6).

Through the development of knowledge and understanding of the linguistics of SASL, learners were able to use language (SASL) at a more advanced level, and teachers and assistants were empowered to use the language with more confidence. This created a better understanding between staff and learners. It was observed that learners were eager to communicate with teachers and to ask questions (whereas in the past learners were more reserved in class). Concurrently, teachers understood learners' needs better and could answer questions appropriately. The development of different assessment strategies and techniques had many positive consequences, not only for the language subjects but also for the content-based subjects.

Developing of cultural awareness led to a better understanding of identity and belonging amongst learners. Learners indicated that they experience their deafness more positively. Teachers gained an understanding of Deaf culture, which enabled them to understand the Deaf child and to expect more from the Deaf child academically. The SASL curriculum pilot project showed that SASL is sustainable as subject and that teaching SASL as a subject improved the quality of education on all levels.

Apart from the general benefits to Deaf education, individual learners benefitted from the implementation of the SASL curriculum, as will be shown in Chapter 5. As stated above, in Chapter 5, I discuss the progress made by four individual learners, indicating the gains from being exposed to SASL as subject. Only one of the four participants in this study received any exposure to SASL before entering a school for the Deaf. Upon entering a school for the Deaf, they were not exposed to Signed Exact English or Afrikaans (as their predecessors had been) but to SASL, as a LOLT immediately upon school entry and as a school subject from Grade R onwards. Whereas it is debatable whether or not exposure to the SASL as school subject had any influence on these children's language development, teaching on SASL (i.e., receiving metalinguistic knowledge about SASL) made it possible to compare SASL to the written form of the spoken language when reading instruction commenced. In this respect, it is possible that specifically having SASL as school subject and not merely receiving general exposure to SASL played a positive role in the progress that the four participants made in reading comprehension. In the next chapter, I present the methodology used in the four case studies.

## **Chapter 4**

### **Methodology and Analytical framework**

#### **4.1 Research design**

The study makes use of a multiple case study design and employs longitudinal data. The SASL acquisition of four deaf children was tracked over a period of three years, and their literacy acquisition (in Afrikaans, their L2) over one year. Participants were recorded at the beginning of their pre-Grade R year; at the beginning, middle and towards the end of their Grade R year; and again at the beginning of their Grade 1 year (shortly after formal literacy instruction commenced) and in the middle and towards the end of their Grade 1 year. The progress that the four learners made in SASL and literacy acquisition was analyzed based on these recordings. More detail on aspects of the design of the study is presented in the sections below.

#### **4.2 Participant selection**

Four participants (two boys and two girls) were selected for inclusion in this study. In order to obtain representation from two different language backgrounds (parents who are SASL users vs. parents who have no knowledge of SASL) and from children with various lengths of exposure to SASL, participants were purposefully selected rather than randomly sampled. All participants attended De la Bat School for the Deaf in Worcester where the SASL curriculum pilot study was conducted, and were in Grade 1 at the time of the last recording. (The four participants formed half of the 2013 Grade 1 De la Bat cohort.) All four had been diagnosed with profound congenital hearing loss. Other relevant background information on each participant is discussed in the next chapter, where I present the results of qualitative analyses of their language and literacy acquisition.

### **4.3 The longitudinal recordings**

Throughout the SASL curriculum pilot project, recordings were regularly made for documentation purposes – of classes as a whole (i.e., learners in groups), of individual learners and of teachers. The learners were thus used to the presence of the visible video-recorder in their classroom. Recordings were made (i) in the first term of 2011, in the Grade 0 year, (ii) in February, May and August of 2012, in the Grade R year, and (iii) in March and August of 2013, in the Grade 1 year. Recordings differed in length but usually lasted between one and three minutes each. There are thus eight data points on SASL acquisition for each participant in the present study, with the exception of one boy who started attending De la Bat School in his Grade 1 year only) and three data points on reading acquisition for each participant. For the purposes of this study, the sign language utterances appearing in the relevant recordings were each first glossed and then translated into idiomatic English by me, after which a Deaf consultant studied each recording with me and verified my glossing and English translations. Any differences of opinion as to the correct gloss and translation were resolved through discussion, with the consultant's opinion awarded more weight than mine as she is a L1 user of SASL. The consultant works in the educational domain and is used to providing SASL interpretation. She reads and writes English, her L2, fluently. She has residual hearing and can also speak English at a near-native level.

### **4.4 Ethical considerations**

As explained above, the recordings analyzed in the present study form part of a data bank of recordings built up during the three years of working on the SASL curriculum pilot project. During this project, which was requested by the province's premier, learners and teachers were regularly recorded, with the knowledge of the learners, their parents and the teachers. Because the present study does not directly form part of the SASL curriculum pilot project, the parents of the participants were contacted to obtain their permission to include their children's data in the present study (see Appendix A). After providing information on the study to the parents (to three sets of parents in Afrikaans, their L1, and to the fourth in SASL, their L1), all four participants' parents provided written consent for their child's participation in this study. Parents specifically

had to provide written permission for visual material of their children to be included in the thesis and any journal articles or academic presentations based on this thesis. Parents could choose whether video and/or photographs of their children may be included, or whether neither video nor photographs but only line drawings generated from photographs of their children may be included. Parents also had to indicate whether or not their children's faces had to be blocked out in the videos and/or photographs.<sup>31</sup> All parents consented to videos and photographs of their children appearing without any disguise. In order to anonymise the participants as far as possible, their names were changed for the purposes of this thesis.

Because the data were used in this study for purposes different to those for which the data were originally recorded, permission was obtained from

- (i) the custodian of the recorded data base to use the recordings in this study (see Appendix B), and
- (ii) the Western Cape Education Department to involve their learners (although in recorded form) in a study of this nature (see Appendix C).

Ethical clearance for the study was obtained from the Research Ethics Committee (Humanities) of Stellenbosch University (see Appendix D).

#### **4.5 Data analysis framework**

The data collected at the eight collection points referred to above were analyzed in three ways: firstly, in terms of Boyes Braem's (1990) handshape acquisition model in mastering parameters to learn signs; secondly, with reference to the stages of acquiring dialogue skills (Volterra and Erting 1998: 107, and others) and, finally, with a view to assessing the children's reading skills in terms of comprehension. Each of these is discussed below.

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<sup>31</sup> The faces of minors are often blocked out in publications, but because facial features are part of one of the parameters of signs, the meaning of a sign would have been lost to a certain extent had the faces of the signers been blocked out.

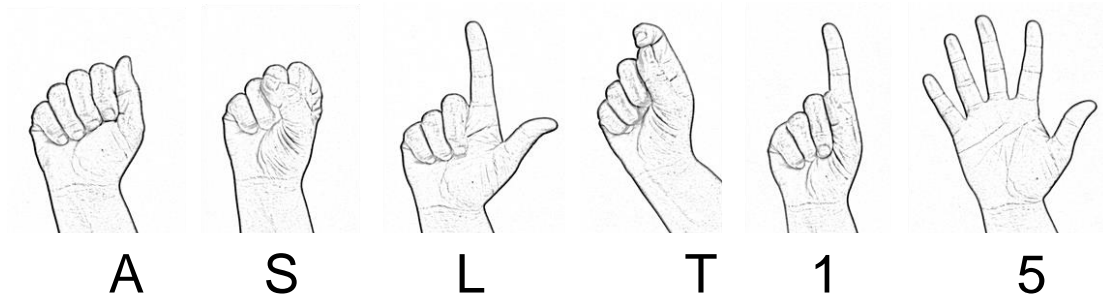


#### 4.5.1 Boyes Braem's handshape acquisition model

The first linguistic descriptions of ASL by Stokoe, Casterline and Croneberg (1965) and Klima and Bellugi (1979) showed that meaningful signs could be broken down into meaningless smaller handshape, movement and location segments. Just as minimal pairs in spoken languages differ by one phoneme only – e.g. *key* [ki] vs. *tea* [ti] – minimal pairs of signs in sign language differ in only one parameter. For example, the British Sign Language signs NAME and AFTERNOON have the same handshape and outward movement, but differ in the location: the hand moves from the forehead in NAME and from the chin in AFTERNOON (Morgan, Barrett-Jones and Stoneham 2006).

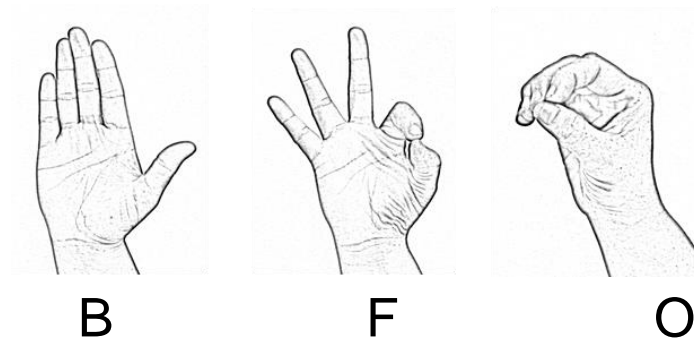
Understanding how children acquire phonology is important to understand language acquisition of the Deaf child (Chamberlain, Morford and Mayberry 2000: 72). It is necessary to discover the nature and structure of phonological acquisition in sign language where the articulators are the entire upper body and the perceptual sense is the eyes. In 1990, Boyes Braem published a model of the order in which handshapes are acquired. She was the first investigator who did research on the order in which signing children acquire handshapes. According to Boyes Braem (1990), two primary factors that influence the production of handshapes are (i) the anatomical development of the hand, and (ii) the “serial finger order”, meaning whether the same features are applied to adjacent digits or digits out of the serial order. For example, the 5 handshape, with all fingers extended and spread apart, should be acquired earlier than the V handshape, which requires the index and middle fingers (but not the ring finger and pinkie) to be extended and spread apart. According to the model that Boyes Braem developed, handshape primes are acquired in four stages, as indicated below.

The Stage 1 handshapes are those that the prelinguistic infant is capable of producing, through reaching, grasping and pointing (see Figure 4.1).



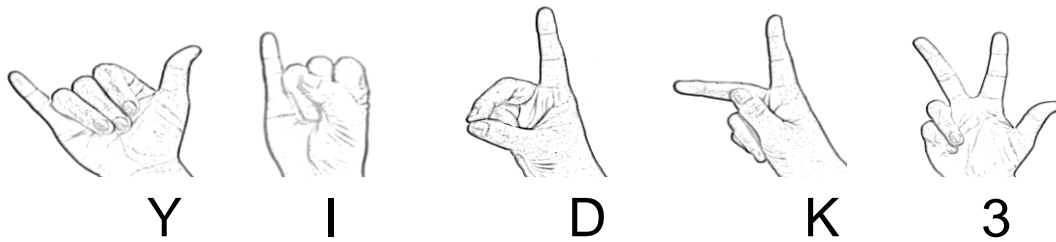
*Figure 4.1. Stage 1 handshapes*

Stage 2 entails variants of handshapes already mastered in Stage 1: the B is a variant of the L handshape; the F is a variant of the 5 handshape, and the O is a variant of the T handshape (see Figure 4.2).

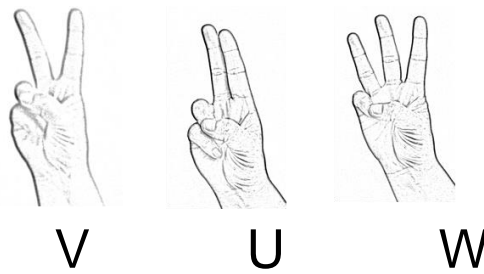


*Figure 4.2. Stage 2 handshapes*

Stages 3 and 4 entail more advanced handshapes that require inhibition and extension of the middle, ring and pinkie fingers (see Figures 4.3 and 4.4). The distinction between Stages 1 and 2 handshapes, on the one hand, compared to Stages 3 and 4, on the other, is supported by the work of Ann (1993). Ann examined the ease of production of handshapes in ASL and Taiwanese Sign Language based on the anatomical structure of the hand and the physiological principles that guide its movement. According to Ann's (1993) classification, Stage 1 and 2 handshapes fall into the "easy" category, whereas Stage 3 and 4 handshapes are classified as "difficult".



*Figure 4.3. Stage 3 handshapes*



*Figure 4.4. Stage 4 handshapes*

When discussing the case studies in the next chapter, I will state at which stage of handshape development each child is at each data collection point.

#### **4.5.2 Analysis of discourse**

Discourse or dialogue skills are seen as the ultimate goal of language (Steward and Clarke 2003: 28). The phonological, morphological, syntactic, semantic and pragmatic components of language are inextricably bound together to enable dialogue or discourse. The rules for discourse are complex, but are readily learned. For the Deaf child, the way in which s/he learns language depends, to a large extent, on the hearing status of his/her parents. If s/he has Deaf parents, s/he will acquire language from birth and naturally, i.e., children who are exposed to accessible language from birth acquire language rather than being taught language (Pinker 1984, as cited in Steward and Clarke 2003: 39). By contrast, Deaf children with hearing parents typically only start learning language when they enter a (pre)school for the Deaf. I will thus discuss the normal stages of language development up to the dialogue stage, making a comparison between speakers of a spoken language and users of a sign language, and when discussing the case studies, I will state at which stage each child is at each data collection point. Note that several of the sources consulted (including those discussing longitudinal studies) discuss stages for hearing children

acquiring a spoken language and then state that – despite the difference in modality (auditory vs. visual) – the stages for Deaf children acquiring a sign language are similar,<sup>32,33</sup> without giving an exposition of the stages for the Deaf children. In cases where no such exposition was given, I gave one based on the information for hearing children and my own observations.

*Table 4.1. Stages of language development for hearing and Deaf children (based on Steward and Clarke, 2003)*

<b>Stages in the language development of a hearing child from birth till dialogue</b>	<b>Stages in the language development of a Deaf child from birth till dialogue</b>
<b>Stage 1</b>	
<p><i>REFLECTIVE COMMUNICATION:</i> Birth to 3 months</p> <ul style="list-style-type: none"> <li>• Non-intentional communication (sounds, gestures, body movements and facial expressions).</li> <li>• Although it seems like intended communication, it is merely reflex actions in reaction to urgent needs or stimuli in the environment.</li> <li>• Eye gaze or eye contact between parent and baby serves as interactive exchange.</li> <li>• At about 6 weeks, cooing starts. The baby coos; the parent smiles and coos back. In this manner, the feature of conversational turn-taking may begin.</li> </ul>	<p><i>REFLECTIVE COMMUNICATION:</i> Birth to 3 months</p> <ul style="list-style-type: none"> <li>• Much the same as in hearing babies.</li> <li>• Eye gaze or eye contact between baby and parent serves as interactive exchange.</li> <li>• All communication is based on visual cues.</li> <li>• Parent plays with handshapes and movement from birth.</li> <li>• Deaf babies coo and babble orally – this occurs naturally, but eventually stops as these sounds are not the building blocks for their language acquisition and they do not receive aural feedback.</li> <li>• Deaf parents use motherese with babies as early as 3 months.</li> <li>• Deaf babies of Deaf parents produce individual and repeated sign components</li> </ul>

<sup>32</sup> Some studies indicate that the acquisition of sign language may be faster than that of spoken language: The age of appearance of first signs is at least 2 to 3 months earlier than that of first words for both Deaf and hearing children exposed to sign language (Bonvillian, Orlansky and Folven 1994). McIntire (1977) report that the growth of sign language vocabulary also appears to be faster: A signing child had a vocabulary of more than 85 signs at 13 months whereas hearing children exposed to spoken language at that age are typically just acquiring their first words. This suggests that manual signs may emerge earlier because neuromuscular development of the system used in signing occurs earlier than development of the systems used for speaking.

<sup>33</sup> Longitudinal studies of sign language show that in spite of the difference in modality – auditory and visual – the milestones of language development may be the same in the Deaf child exposed to sign language from birth as in the hearing child (Tomaszewski 2001).

	<p>without any apparent attempt at communication.</p> <ul style="list-style-type: none"> <li>• Only about six hand configurations are frequently seen in Deaf babies learning sign language.</li> </ul>
<b>Stage 2</b>	
<p><b>BABBLING:</b> 3 to 6 months</p> <ul style="list-style-type: none"> <li>• Baby strings together vowels for own pleasure.</li> <li>• Vowel-like sounds begin to decrease, and syllables consisting of consonant-like sound plus vowel start to appear.</li> <li>• Verbalisations, gestures, body language and facial expressions become easier to interpret.</li> </ul>	<p><b>MABBLING:</b> (Manual babbling)</p> <ul style="list-style-type: none"> <li>• Mabbling consist of simple productions or repetition of components of signs, such as isolated handshapes and movements.</li> <li>• Mabbling provide motivation to engage in “conversations”, the same as babbling in the case of the hearing child.</li> <li>• Should the child not go through this stage, s/he is missing an important stepping stone in natural language acquisition.</li> <li>• Mabbling and gesturing differ in that mabbling is not meaningful whereas gesturing is.</li> </ul>
<b>Stage 3</b>	
<p><b>INTENTIONAL COMMUNICATION:</b> 8 to 12 months</p> <ul style="list-style-type: none"> <li>• Child begins to point, gesture, or produce meaningful sounds to gain attention or to request something s/he wants.</li> <li>• If s/he does not get what s/he wants, tantrums might appear.</li> <li>• Child begins to use sound sequences as if they are conventional words, e.g. <i>bob</i> for <i>bottle</i>.</li> <li>• Child starts using a kind of jargon.</li> </ul>	<p><b>INTENTIONAL COMMUNICATION:</b></p> <ul style="list-style-type: none"> <li>• Pointing represents the first meaningful sign.</li> <li>• Bates and MacWinney (1979) found that communicative pointing was the best predictor of early linguistic performance.</li> <li>• Two points represent a two-sign production, e.g. if a boy wants to indicate that a particular toy is his, he might show possessor and possessed with a sequence of two points, one to the toy and the other to himself (Lane et al. 1996: 45).</li> </ul>
<b>Stage 4</b>	
<p><b>FIRST WORDS :</b> 12 to 18 months</p> <ul style="list-style-type: none"> <li>• Child starts using words referring to people (<i>mom, dada</i>, etc.) objects, events</li> </ul>	<p><b>FIRST SIGNS</b></p> <ul style="list-style-type: none"> <li>• Many signs during this stage consist of nouns and verbs, such as <i>mother</i> and <i>eat</i>.</li> </ul>

<p>and movements.</p> <ul style="list-style-type: none"> <li>• Single words can have more than one meaning, e.g. <i>mom</i> can mean “Pick me up, Mommy” or “This is Mommy’s bag” (i.e., holophrastic utterances).</li> <li>• Underextension: For example, child uses <i>bob</i> only for his/her own bottle and no other bottle.</li> <li>• Overextension: For example, child uses <i>dada</i> for all males.</li> <li>• Vocabulary increases slowly because a lot of time and effort also goes into other important skills, such as motor and balance skills.</li> </ul>	<ul style="list-style-type: none"> <li>• During this stage, frequent errors are normal; these are characteristic of “baby talk”.</li> <li>• Many studies have found that the Deaf child’s first signs appear two to three months earlier than the hearing child’s first words (Lane et al. 1996: 46). (This could be because the manual modality provides an accessible means of communication for the young children: Speech mechanisms are less controllable and the motor control of the hands may develop earlier than that of the vocal apparatus (Lane et al. 1996: 46)).</li> <li>• At 13 months, the Deaf child uses approximately 85 signs.</li> <li>• Deaf parents naturally present original language forms that are slightly above the language level of the child.</li> </ul>
<p><b>Stage 5</b></p>	
<p><i>TWO-WORD UTTERANCES:</i> 18 to 24 months</p> <ul style="list-style-type: none"> <li>• Around 2 years of age, child has vocabulary of approximately 40 words.</li> <li>• Child begins to form two-word sentences, e.g. <i>daddy car</i>, which can have multiple meaning, such as “There goes daddy’s car” or “I see daddy’s car”, depending on the context.</li> <li>• Word order is still incorrect.</li> <li>• Large increase in vocabulary (over 100 words).</li> <li>• Child learns to negate; <i>no</i> is used increasingly, also to show independence.</li> <li>• Parents will now start brief conversations even if child does not part-take.</li> </ul>	<p><i>TWO WORD UTTERANCES:</i></p> <ul style="list-style-type: none"> <li>• Two-word utterances appear more or less at the same age as for the hearing child.</li> <li>• Utterances consist of basic signs without grammatical markings.</li> <li>• Existence statements appear first, e.g. POINT MOTHER, thereafter statement of actions, e.g. FATHER EAT, thereafter statements of states of being, e.g. MOTHER HAPPY, thereafter statements of location, e.g. POINT TRUCK, and finally statements of characteristics of actions, such as manner (RUN FAST), and indirect object (GIVE MOTHER).</li> <li>• At 20 months, pronouns start appearing after which they are not used for a while, reappearing after 2 years.</li> <li>• Two forms of negation start early in this stage: a headshake and the sign NO. These are placed before the verb, e.g. NO EAT.</li> </ul>

	<ul style="list-style-type: none"> <li>• Next emerges NOT and then CAN'T.</li> <li>• The development of verb agreement takes place very early in acquisition, even before 2 years of age (Schick, Marschalk and Spencer 2006: 108)</li> </ul>
<b>Stage 6</b>	
<p><i>THREE- TO FOUR-WORD UTTERANCES:</i> 24 to 36 months</p> <ul style="list-style-type: none"> <li>• Child starts forming three-word sentences.</li> <li>• Sentence length increases as the child acquires various parts of speech such as conjunctions, prepositions, auxiliaries, plurals, verb endings, copula, pronouns, verbs, and quasi-modals.</li> <li>• <i>Why</i> questions are asked frequently, to initiate conversation rather than for understanding.</li> <li>• Child shows that s/he enjoys stories.</li> <li>• Child enjoys being read to.</li> </ul>	<p><i>THREE- TO FOUR-WORD UTTERANCES:</i></p> <ul style="list-style-type: none"> <li>• Child starts using three-sign sentences but does not rely extensively on sign language word order.</li> <li>• It seems as if the child prefers subject-verb-object order at this stage.</li> <li>• As s/he becomes at ease with the latter, s/he moves to subject-object-verb (in ASL), e.g. FATHER CAR BUY.</li> <li>• At the age of 2 years, pronouns for all three persons are evident. However, sign language has many more pronouns for entities and people (viz. classifiers) than English does, and these only start appearing after the second birthday. Deaf children have been found to produce productive classifier forms between 2 and 3 years. However, the development of classifiers is challenging for children to <b>master</b>; this can take up to 8 or 9 years of age. (Schick et al 2006: 111)</li> <li>• Child enjoys signed stories (based on my personal observation during the SASL curriculum pilot project).</li> <li>• Child enjoys watching signed DVDs.</li> </ul>
<b>Stage 7</b>	
<p><i>COMPLEX SENTENCES:</i> 3 to 5 years</p> <ul style="list-style-type: none"> <li>• Child starts combining two or more ideas.</li> <li>• S/he first starts using <i>and</i> to join phrases and sentences; soon after that, <i>because, but, when, who, what</i> appear.</li> </ul>	<p><i>COMPLEX SENTENCES:</i></p> <ul style="list-style-type: none"> <li>• Child starts using more complex sentences with an indication that s/he is mastering the grammar of sign language.</li> <li>• Around the age of 3 years, verb agreement appears, with the verb moving from its</li> </ul>

<ul style="list-style-type: none"> <li>• Child’s grammar becomes far more complex.</li> <li>• Uses auxiliaries <i>can, will, do</i> correctly.</li> <li>• Correct forms of copula (<i>is, are</i>) are used in questions.</li> <li>• Contractions are used (<i>didn’t, can’t, I’m</i>).</li> <li>• Spoken vocabulary of up to 5000 words.</li> <li>• Child will still make developmental errors.</li> <li>• Child begins to use language as a tool in problem solving, imagining and learning.</li> <li>• Conversations grow longer, and narratives become part of child’s repertoire.</li> <li>• At 3 years, children attempt to tell a story using one or two sentences.</li> <li>• Later in this stage, four to five sentences are used and narratives become well structured.</li> </ul>	<p>subject location to its object location, e.g. the child makes the one sign utterance for MOTHER-GIVE-ME by starting the sign GIVE where the mother is located and moving the sign to a location close to the child’s chest. (This can only be done if the locations are present in the room.)</p> <ul style="list-style-type: none"> <li>• Child also masters more sophisticated use of verbs and their grammatical conventions, using verb inflections to show how an action is performed, e.g. whether it is habitual, continuing or repetitive.</li> </ul>
<p><b>Stage 8</b></p>	
<p><i>LITERACY:</i> 6+ years</p> <ul style="list-style-type: none"> <li>• Language growth and vocabulary expansion continue.</li> <li>• Child discovers the power of communication in social interactions.</li> <li>• This is also the stage where reading and writing typically commence.</li> <li>• To become text literate, the child requires: <ul style="list-style-type: none"> <li>- A broad vocabulary.</li> <li>- A good knowledge of syntax and other features of the language.</li> <li>- A store of background knowledge about the world in which s/he lives.</li> </ul> </li> </ul>	<p><i>LITERACY:</i></p> <ul style="list-style-type: none"> <li>• It is only in a later stage of sign language acquisition that the child produces most of the regular changes in movement of verbs, but has not necessarily yet figured out how to combine those changes simultaneously according to the rule, e.g. LOOK-REPEATEDLY-OVER-A-LONG-TIME.</li> <li>• The Deaf child may go on mastering the system for complex verbs until as late as 7 or 8 years.</li> </ul>



Based on many case studies, Volterra and Erting (1994: 303) in their book ‘From Gesture to Language in Hearing and Deaf Children’ reach the conclusion that “the fundamental stages of sign language and spoken language acquisition are the same. In addition, the timing of the achievement of milestones in sign language acquisition corresponds fairly well to the achievement of their counterparts in spoken language acquisition”. It is, however, necessary to consider the development of both Deaf children of Deaf parents and Deaf children of hearing parents separately. Because only 10% of deaf babies have Deaf parents, most deaf children are not effectively exposed to a conventional language until school age or even later; they are first exposed to sign language whenever they happen to find themselves in a setting where there are other signers. When hearing children acquiring a spoken language make the transition from pre-linguistic gestural communication to language, a modality change occurs. Deaf children of Deaf parents (i.e., those deaf children acquiring a sign language from birth) communicate pre-linguistically and linguistically in the same visual-gestural modality (Volterra and Erting 1994: 1). Deaf children of non-signing hearing parents, by contrast, start off with pre-linguistic gestural communication, is then expected to transition to the oral-aural modality which they cannot access and then only later, upon exposure to sign language, return to the visual-gestural modality. The language development stages of this last group of children have not been documented well, so when discussing the case studies of those three children who have hearing parents, I will refer to the stages for Deaf children (those who received exposure to sign language from birth), even though the exposure to SASL was delayed for three of the four participants in the current study.

No acceptable theoretical framework for the analysis of specifically syntactic skills of signing Deaf children could be sourced from the literature. A simple one was thus devised for the purposes of this study: I measured the number of utterances, length of sentences, and correct use of word classes and word order in the signed dialogues of each of the learners at each of the data collection points. I report on these, together with the stage at which the child is (based on Table 4.1), in the next chapter.

### 4.5.3 Analysis of reading comprehension

There are three types of literacy, namely functional, cultural, and critical literacy (Lane et al. 1996: 280). The primary goal of education in general is cultural and critical literacy. However, Deaf learners often leave school with only functional literacy (or no literacy skills whatsoever).

According to Meadow (1968: 29), reading requires two essential abilities: familiarity with a language, and understanding the mapping between that language and the written word. At school entry, deaf children are often deficient in both. However, reading is possible if deaf children learn a sign language (a linguistic code that, although not based on sounds, is nonetheless a natural language). Once they have acquired sign language, deaf children can learn how to map between sign language and print so that they can learn an L2 and learn to read in that L2. Piloting the SASL curriculum, the point of departure was that SASL is the only language the deaf child in the South African school system is able to learn naturally and easily. SASL is a natural language because it is rule-governed, predictable and generative; it can be used for full communication and as a means for acquiring new knowledge, including knowledge of other languages. In the SASL curriculum pilot project, we thus approached the learning of Afrikaans/English as an L2 and language of literacy through SASL.

Instruction according to the bilingual-bicultural approach (the approach used during the SASL curriculum pilot project) includes several components, such as that academic subject matter is taught through the learner's primary language, and Afrikaans/English is taught as an L2 by using his/her L1 to do so. In the SASL curriculum pilot project, SASL was thus used as a bridge from the child's existing linguistic and cultural knowledge to reading and expressive skills in Afrikaans/English. For the purposes of this study, I investigated the children's reading comprehension. I did this by observing the accuracy of their signing (in terms of grammar and content) while they translated online from written Afrikaans to SASL while reading.

In the next chapter, I present to four case studies. I then summarise my results in the last chapter of this thesis, chapter 6.

## Chapter 5

### **The case studies: Deaf children acquiring SASL and reading skills**

In this chapter, I present the data on four children purposively chosen as case studies due to their being regarded as fairly representative of Deaf children given the heterogeneity in terms of age of diagnosis, severity of hearing loss, deafness in their immediate families, and length of exposure to sign language. For each case, I provide information on (i) background (home background; hearing and amplification history; medical and learning problems, where applicable, and in as much detail as was available; educational history and language exposure; and speech and language competence); (ii) language development in Grades 0, R and 1; and (iii) reading development in Grade 1. The discussion is accompanied by video clips on a DVD. In each case, an index of the clips referred to in the text appears at the beginning of the given subsection.

#### **5.1 Case study 1: Hannes Terreblanche**

##### **5.1.1 Background information: Hannes Terreblanche**

###### **5.1.1.1 Home background**

Hannes was born to Afrikaans-speaking parents. His father is hearing, but his mother is hard-of-hearing due to Waardenburg syndrome. At the time of enrolment at De La Bat School (when Hannes was 8 years old), the family resided in a rural town in the Eastern Cape, but they have since moved to a mining town in Gauteng. Hannes is the younger of two children. His older brother has normal hearing. His parents report that the family has a good family life and that they are close to each other, with support from both paternal and maternal relatives. At the time of enrolment at De la Bat School, his father (a diesel mechanic) was unemployed and his mother a housewife.

###### **5.1.1.2 Hearing and amplification history**

Hannes was diagnosed very soon after birth with a bilateral sensori-neural hearing loss associated with Waardenburg syndrome. As stated above, Hannes's mother also has a hearing loss and

Waardenburg syndrome. He was fitted with hearing aids at the age of 3 months, but showed no reaction to sound. At 10 months, he was assessed for and received a cochlear implant. According to the surgeon's report, the implant surgery was successful. His 3G processor was activated when he was 12 months old, which allowed for the possibility of speech processing. The first follow-up appointment that he attended after the activation of the processor was 6 months later. (Typically, many follow-up appointments in rapid succession are required immediately after the activation of the speech processor in order to fine tune the settings thereof and to monitor progress closely.) During this appointment, his 3G processor was reprocessed by the ear, nose and throat practice, because the family had by then not yet deposited into the practice's bank account the money (raised through fundraising) for the hardware. A cochlear implant programme in Gauteng then donated a speech processor to Hannes. The next recorded visit about hearing was in June 2007, when Hannes was 3 years 6 months old. The visit was to an audiologist in Durban, who then fitted him with a loan speech processor, as the donated one was no longer accounted for. In 2008, the family reported to the Gauteng cochlear implant programme. At this time, Hannes was still wearing the loan processor, which was then returned to the audiologist in Durban. In 2011, a school for the Deaf reported that he has been enrolled with them but that he was not wearing any processor. In April 2012, when Hannes was 8 years 4 months old, he was tested by the audiologist at De la Bat School for the Deaf in Worcester. The diagnosis was as follows: He had bilateral profound hearing loss. Tympanometry indicated healthy middle ear functioning. His cochlear implant was no longer in working order. His audiogram appears in Figure 5.1 below.

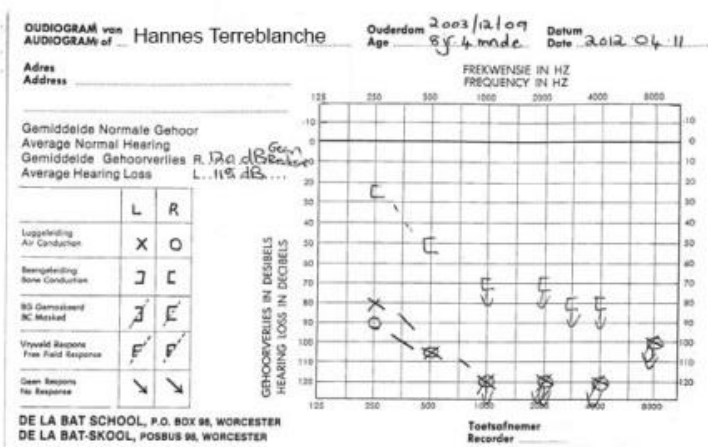


Figure 5.1. Hannes Terreblanche's audiogram

### **5.1.1.3 Medical, emotional and other problems**

Hannes has branchio oto renal syndrome, which can also cause hearing loss. (About 90% of children with branchio oto renal syndrome have a hearing loss.) Hannes has had one kidney removed. When he first came to De la Bat School, a significant language, reading and writing backlog was reported, as well as specific learning problems. In the hostel where Hannes stays at De la Bat School, he reportedly presents with behavioural problems. He suffers from enuresis and has not yet developed bowel control. No medical cause for this condition has yet been found.

### **5.1.1.4 Educational history and language exposure**

Hannes went to school for the first time on 8 March 2010 in the preschool section of a school for Deaf children in Gauteng, when he was 6 years 2 months old. The LOLTs at the school were Afrikaans and SASL. During his time at that school, he was absent very often, according to his mother. He left the school on 17 February 2012, having passed Grade R the year before. In his mother's opinion, Hannes was only "looked after" during his time at the school and not really taught. On 12 April 2012, when he was 8 years 4 months old, he was enrolled at De la Bat School in Worcester in the Grade 1 class. He showed an interest in the school programme and was keen to learn new skills. However, shortly after his enrolment at De la Bat, he broke his arm and was absent from school for more than six weeks. The fact that he only joined Grade 1 in April, plus the long absenteeism from school after breaking his arm, resulted in him having to repeat Grade 1 in 2013. His progress from that point was excellent; he excelled beyond expectation.

### **5.1.1.5 Speech and language competency**

Even though Hannes received a cochlear implant at the age of 10 months, he used no spoken language but engaged in a manual form of communication (i.e., gestures), even at home. Note however that although his mother is hard-of-hearing, the family uses no SASL at home. Hannes used gestures that he constructed for himself, but was willing to copy the De la Bat signs if showed. He exhibited a readiness to be taught SASL formally. Upon his enrolment at De la Bat, he was placed in the class of a teacher with an excellent command of SASL. Hannes was immersed in SASL by this teacher during the school day. In the afternoon in the hostel, his houseparent, who also had some command of SASL, used SASL with Hannes as far as possible.






Hannes also had SASL as a subject. Through co-operation between his class teacher and the SASL teacher,<sup>34</sup> the bilingual-bicultural approach was maximised.

## 5.1.2 Language development in Grade 1 (in 2012 and again in 2013): Hannes Terreblanche

### 5.1.2.1 Handshape

It was difficult to track Hannes's handshape acquisition as he was only admitted to De la Bat School in April 2012 and was then placed in Grade 1, whereas the project was implemented as from 2011 and as from preschool. There was thus no opportunity to record Hannes's use of handshapes systematically and over the required period of time. He had obviously mastered some handshapes successfully, although it was clear that his language was not on par with that of the rest of his classmates. He was however very eager to learn SASL and seemed to try his best.

### 5.1.2.2 Discourse skills

Hannes Terreblanche	Hannes Terreblanche	Hannes Terreblanche	Hannes Terreblanche	Hannes Terreblanche
				
'Colours'	At the beach'	'Our class'	'The school bus'	'Didi + Dudu visit the farm'
DVD CLIP 1 Grade 1 April 2012	DVD CLIP 2 Grade 1 October 2012	DVD CLIP 3 Grade 1 (Repeat) February 2013	DVD CLIP 4 Grade 1 (Repeat) April 2013	DVD CLIP 5 Grade 1 (Repeat) October 2013

### Grade R (2011)

There are no recordings for Hannes for 2011 and thus nothing can be reported about Hannes' discourse skills in Grade R as he only entered De la Bat School in April of the following year and was then placed in Grade 1.

<sup>34</sup> Both teachers had undergone a year of formal SASL training in SASL grammar and linguistics by the University of the Free State.

**Grade 1 (2012) (April to October)*****See DVD: Clip 1***

For each DVD clip referred to in this chapter, the content will be presented in table format. The glossed version of the SASL utterances will appear in the first column with the English translation appearing in the second column.

<b>Clip 1 ‘Colours’ (Grade 1: April 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
BROWN(short pause) TAIL (pause)	Brown ... tail .....
WHITE (pause) BUTTON++	White ... mmm ... buttons
PINK LIP	Pink lip
FINISH (short pause) FINISH(puts hands in pocket to stress that he is finished)	I have finished ... finished. <i>(To stress that he had said everything he was able to say, he put his hands in his pockets.)</i>

During his first recorded discourse in April 2012 (very shortly after enrolment at the school), Hannes was visibly nervous and not confident at all. He was here more or less at Stage 4/5 in terms of his discourse skills (see Table 4.1). Although he was already 8 years old, he was on par with a 2-year-old native user in terms of stage of language acquisition. During this recording, he made three two-sign utterances, after which he appeared relieved to sign FINISH FINISH as if to say “I have definitely finished”. For emphasis, he then put his hands in his pockets. No grammatical markings were used, and all his sentences expressed states of being. Bearing the above in mind, Hannes is in the early two-sign utterance stage. In this clip, all SASL utterances have an incorrect word order, because in SASL the modifier follows the noun which it modifies.

***See DVD: Clip 2***

<b>Clip 2 ‘At the beach’ (Grade 1: October 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
MOTHER FATHER (repeat ‘father’ 3x, as if stuttering)	Mother and Fa... Fa... Father <i>(as if stuttering)</i> went swimming.
V.CL (dir. ver-sweeping movement from lf to rt)	We looked around.
LOOK	Mother says, “You must put on suntan lotion”.
MOTHER SAY SUNTAN-PUT-ON (neg.) r-shift turn to mother lf, gaze lf)	I say, “No”.
ME NO	Mother says it is important to put suntan lotion

IMPORTANT SUNTAN- PUT-ON	on.
RESPONSIBLE	It is responsible.
FINISH	After I finished with the suntan lotion,
BUILD BUILD SAND	I start building with the sand.
PLAY- PLAY <i>(dir. verb. movem. to lf)</i>	I play and play.
MOTHER SAY HOME-GO	Mother calls me to go home.
<i>V.CL (dir. – circular movement from lf to rt)</i>	We walked home.
WE-HOME-GO	
ME SORE	I am sore.
<i>V.CL (upside-down) neg</i>	I cannot lie down.
LIE-DOWN CANNOT	
FINISH	My story is finished.

Due to frequent absenteeism since his enrolment at De la Bat School, Hannes was not on par with the development of the rest of the class during the October 2012 recording. He was still using two-sign and three-sign utterances, which means that he was still at Stage 5, proceeding to Stage 6 (see Table 4.1). During the recording, he appeared unsure of himself and regularly looked to the teacher for confirmation. After signing a few sentences, he hastily signed FINISH FINISH. His signing can be described as “slap dash” in the sense that handshapes were not formed neatly and confidently. He repeated signs (e.g. FATHER was repeated twice, rendering three consecutive occurrences of the sign) as if stuttering. He had however made progress in this stage, as he was already using negation (NO and CANNOT) and made statements of characteristics of actions. He used one classifier, for LOOK (V-hand), classifier use being one of the characteristics of Stage 6.

### Grade 1 (Repeated) (2013)

*See DVD: Clip 3*

Clip 3 ‘Our class’ (Grade 1: February 2013)	
SASL GLOSS	English version
<i>V:CL (dir. verb(rt)) V:CL (dir. verb(rt)) gaze lf</i>	
WALK GIRL WALK LAUGH <i>K: Ins.CL (dir. verb(rt))</i>	The girl is walking and laughing.
NEWSPAPER TEACHER-GIVE	She gives the teacher a newspaper.



SHE MATHS BOOK++ HAND-OUT++ <i>gaze lf: head rest on lf hand</i>	She (the teacher) hands out the mathematics books.
ME BORED  <i>(dir. verb, movem. to left)</i>	I am bored.
WE-EACH-OTHER- LOOK-AT ((2h)V-CL) <i>neg.</i>	We look at each other.
WORK DO-NOT-WANT FINISH	We do not want to work. My story is finished.

As stated above, Hannes repeated Grade 1, because of his late admission to De la Bat School, his absenteeism and perhaps his struggle to fit into a more structured environment. The recording in February of his second Grade 1 year differs significantly from those made during his first Grade 1 year. He started signing with confidence. Although his utterances were still few, he used three- to four-sign sentences. He also used facial expression and role shifting. He had started using adverbs and adjectives, e.g. ME BORED (“I am bored”). While signing this, his body movement and facial expression clearly conveyed that he was not only bored, but very bored. Hannes started to use the correct SOV SASL sentence structure, e.g. SHE MATHEMATIC BOOK++ HAND-OUT. His announcement at the end that he had finished was not despondent as it had been during the recordings made in the previous year, but just an end announcement.

*See DVD: Clip 4*

<b>Clip 4 ‘The school bus’ (Grade 1: April 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
TITLE – SCHOOL BUS  <i>body jerk to lf, face determined</i>	The title is “The school bus”.
UNCLE BUS STOP-SUDDENLY  <i>V:CL</i>	Uncle suddenly stops the bus.
ME(CL:Bent V)-BUS-GET-ONTO	I get on to the bus
SIT-UP-STRAIGHT  <i>cheeks sucked in (drive in determined way)</i>	and sit down.
BUS-DRIVE	The bus starts to move.

<p style="text-align: center;"><u>V:CL</u></p> <p>TWO CHILD++ <u>STAND</u></p> <p><i>V:CL eyes closed, gaze rt</i></p> <p>LOOK WHO BUS NOT-YET COME NOT-YET</p> <p>WANT BUS GET-ON</p> <p>BUS STOP</p> <p><i>Vbent:CL cheeks puff. gaze down</i></p> <p><u>CHILD++ BUS GET-ONTO</u></p> <p>CHILD++ COUNT</p> <p style="text-align: center;"><i>headshake</i></p> <p>DO-NOT-KNOW</p> <p>ONE TWO THREE (<i>pause</i>) EIGHTEEN</p> <p>CHILD++</p> <p>THREE O’CLOCK</p> <p>TEACHER SCHOOL STAND</p> <p>LOOK CHILD++ WHO NOT-YET HERE</p> <p>BUS STOP</p> <p>CHILD++ GET-OUT GET-OUT GET-OUT</p> <p>FOUR CHILD++ ROW-STAND</p> <p>WALK-IN-ROW</p> <p>HEARING-AID PUT-ON</p> <p>NEXT NEXT NEXT</p> <p>STAND-IN-ROW</p>	<p>Two children stand</p> <p>and look whether the bus has not yet arrived.</p> <p>They want to get on the bus.</p> <p>The bus stops.</p> <p>The children get on the bus.</p> <p>Uncle counts the children.</p> <p>He does not know how many there are. He counts, “One, two, three... eighteen children”.</p> <p>It is three o’clock.</p> <p>The teacher is standing at the school.</p> <p>He is looking for the children who are not there yet.</p> <p>The bus stops.</p> <p>The children get out of the bus.</p> <p>Four children stand in a row.</p> <p>They walk in a row.</p> <p>They put their hearing aids on.</p> <p>The next one and the next one and the next one.</p> <p>They stand in a row.</p>
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In this clip, Hannes did not just start signing. Rather, he first stated the title of his story. The discourse consists of 24 sentences, including some four- and five-sign sentences. He used quite a number of classifiers correctly, and he used facial expressions to convey grammatical features. He used creative reasoning skills when explaining how the children got on and off the bus. Classifiers were used more frequently than in the previous recording (cf. when he signed about learners getting on and off the bus). The SASL sentence structure is in place and is mostly used correctly, with only a few mistakes, e.g. FOUR CHILD++ instead of CHILD++ FOUR. Hannes did not announce that he had finished with his narrative; he merely smiled and gave a slight bow.




*See DVD: Clip 5*

<b>Clip 5 ‘Didi and Dudu visit the farm’ (Grade 1: October 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
TITLE – DIDI DUDU FARM GO ( <i>dir.verb lf</i> )	The title of my story is “Didi and Dudu go to the farm”
WEEKEND ( <i>pause</i> ) DIDI DUDU FARM GO ( <i>dir. verb lf</i> ) V-CL ( <i>num. incorp</i> ) TWO EXCITED	On the weekend, Didi and Dudu go to the farm. The two of them are very excited.
SATURDAY EARLY DIDI DUDU CAR- <i>Vbent:CL</i>	Saturday early, Didi and Dudu get in the car.
GET-INTO MOMMY DADDY GO-WITH <i>(2h)A-CL</i>	Mommy and Daddy accompany them. They drive far.
FAR DRIVE <i>V-CL</i>	Dudu looks out of the window.
DUDU WINDOW LOOK-OUT	He sees a cow.
COW SEE <i>V-CL</i>	“Look, Didi,
DIDI LOOK <i>V-CL</i>	there is a cow!”
SEE COW WINDOW-LOOK-OUT DIDI PET WANT <i>Y/N question</i>	Didi looks through the window. “Can I catch the cow to keep it as a pet?”
COW CATCH CAN MOMMY EXPLAIN <i>neg</i>	Mommy explains, “No, a cow is a farm animal”.
NO FARM ANIMAL <i>V-CL</i>	Dudu looks through the window
DUDU WINDOW LOOK-OUT	and sees a sheep, and says, “Didi, look, there is a sheep!”
SHEEP SEE DIDI LOOK SHEEP THERE DIDI SHEEP SEE DIDI SAY DUCK MOMMY EXPLAIN <i>headshake neg</i>	Didi sees the sheep. Didi says, “There is a duck”. Mommy explains, “No, Didi, that is not a duck; it is a goose.”
NO THAT GOOSE	

<p><i>B-CL puff cheeks</i>  <b>FARM GO CAR STOP</b>  <b>UNCLE NAME fs J-A-N</b>  <b>TRACTOR NEAR YELLOW</b>  <b>FARM NICE VISIT</b></p>	<p>On the farmyard, the car stops.                   There is uncle Jan.                  Near him is a yellow tractor.                  It is nice to visit the farm.</p>
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In Clip 5, Hannes formally announced the title of his story. He made use of the correct sentence structure (namely subject-object-verb): DIDI DUDU FARM GO (“Didi and Dudu go to the farm”). He used 27 sentences, all well-formed, during the telling of his story. He included the degree of the adverb EXCITED in his facial expression, and the adverb of time SATURDAY was correctly placed at the beginning of the sentence. He demonstrated good use of classifiers, e.g. SATURDAY EARLY DIDI DUDU CAR-GET-INTO (“On Saturday, Didi and Dudu get in the car”), using the bend V-hand twice to indicate that two people are performing the action and not only one. In general, his handshapes while forming the different signs were neat and precise. He indeed made noticeable progress in signing skills since his first recording in April 2012.

### 5.1.3 Reading development in Grade 1 (2013): Hannes Terreblanche

Hannes Tereblanche	Hannes Tereblanche	Hannes Tereblanche
		
CLIP 6 Grade 1 (Repeat) February 2013	CLIP 7 Grade 1 (Repeat) April 2013	CLIP 8 Grade 1 (Repeat) February 2013

Because Hannes had to repeat his Grade 1 year, he only truly started reading in 2013, and this was when he was recorded.

**February 2013: (See DVD Clip 6).** Hannes was able to read independently an Afrikaans book containing much repetition and only three-word sentences, e.g. *Wat is dit?* (“What is this?”), *Dit is ‘n skulp* (“This is a shell”). Recall that the learners were required to read the Afrikaans text

silently and then translate into SASL what they had understood from the Afrikaans text,<sup>35</sup> which Hannes did successfully; what he signed was a correct version of what appears in the Afrikaans text, namely:

*wh-question*  
DIT WAT

DIT SKULP

Through the bilingual process, his attention was drawn to the structural differences between SASL and Afrikaans, and to the sign and the Afrikaans word. He was taught that even though the sentences in the two languages looked different, they meant the same. He now recognised the differences himself by reading the Afrikaans silently and conveying the correct message in grammatical SASL. This indicated full comprehension of what had been read.

**April 2013: (See DVD Clip 7).** In this recording, Hannes was reading a story about the family who came to visit to join in celebrating Didi and Dudu's birthday. Sentences in the text were longer than in the previous recording, yet he was reading at a good speed. The reading process was fluent and the sentence structure was correct when translated into SASL. Around the time of this recording, Hannes started showing an interest in reading for pleasure.<sup>36</sup> He would take books from the class library when he had completed his other work and had some free time during class time.

**October 2013: (See DVD Clip 8).** Here, Hannes was doing unprepared reading. He had to use what he had read in the text to colour in the picture. The completed picture indicated his understanding of what he had read, because he coloured in the picture according to what he had read in the text. While reading the Afrikaans, Hannes was translating it into SASL. This provides evidence that he was not reading word for word but was reading with understanding. Reading with understanding is the goal of the bilingual approach. In performing the task successfully,

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<sup>35</sup> It is important to note that throughout the reading process, SASL and Afrikaans are kept totally separate. The differences between the two languages are pointed out continuously. The child is expected to read the Afrikaans sentence silently and then sign in SASL what s/he understood from the Afrikaans text. This process is thus a more complex process than the one the hearing child is performing when reading.

<sup>36</sup> From my experience as teacher for the Deaf, I have learnt that reading was an unpleasant activity for most Deaf children, and it was therefore indeed encouraging for me to see that reading was being done voluntarily.

Hannes showed a mastery of cognitive processes as he was not making use of phonics to read. Hannes did not read phonetically despite the fact that he has a cochlear implant. The fact that he had received the speech processor so late in his life could be the reason for not reading phonetically.

## **5.2 Case study 2: Josh Russell**

### **5.2.1 Background information: Josh Russell**

#### **5.2.1.1 Home background**

Josh was born on 24 June 2005. He is the second of three children. His older sister is hearing and his baby brother is deaf. Both his parents are deaf, were learners at a school for the Deaf and are gainfully employed. His father is from a hearing, Afrikaans-speaking family and his mother from a hearing, English-speaking family, but both parents have SASL as L1. Josh belongs to a close-knit family who uses SASL in the home. They stay with other family members in a four-bedroom house. The extended family is very supportive of Josh's family.

#### **5.2.1.2 Hearing and amplification history**

Josh was diagnosed with congenital sensori-neural hearing loss shortly after birth. Tympanometry indicated normal middle ear conditions, whereas pure tone audiometry indicated a profound hearing loss bilaterally (see Figure 5.2). He was fitted with hearing aids bilaterally at Tygerberg Hospital shortly after diagnosis.

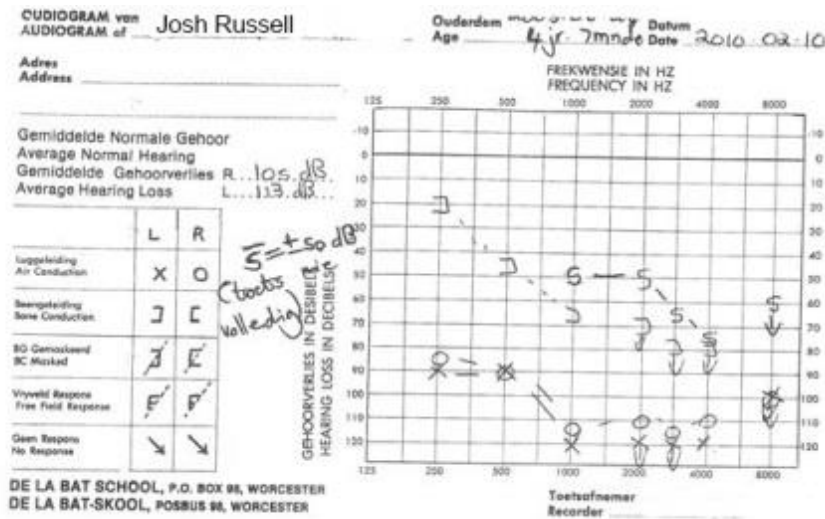






Figure 5.2. Josh Russell's audiogram

### 5.2.1.3 Educational history and language exposure

Josh regularly attended an Educare Centre (crèche) for hearing children. In February 2010, at the age of 4 years 7 months, he was admitted to De la Bat School's preschool section. In his first year, he would mix sign language, Afrikaans and English. He was, however, in the English stream using SASL as L1 and English as L2 (i.e., as his language of literacy). His teacher described him as very intelligent, with much potential and a good command of language. During his second year in the preschool, Josh proved that he enjoys challenges, is very competitive and likes to debate issues. However, he became visibly irritated with his classmates for not being able to work at his pace. He also became frustrated when he had to reduce his pace in order to allow the rest of the class to catch up with him. This occurred amongst others because his signing proficiency was significantly better than that of his classmates. At the end of 2011, after consultation with his parents, it was decided to place Josh in the Afrikaans stream where there were academically and linguistically stronger learners and where he could experience academic challenges. Without much effort, he fitted into the Afrikaans Grade 1 class well and appeared less frustrated. He made excellent progress overall.

## 5.2.2 Language development in Grades 0 and R (2011 to 2012): Josh Russell

### 5.2.2.1 Handshape

Stage I	Stage II	Stage III	Stage IV
			
Josh producing the G-hand	Josh producing the O-hand	Josh producing the H-hand	Josh producing the T-hand
5-Hand, G-Hand, S-Hand	O-hand	H-hand, V-hand	T-Hand
Clip 9			

Josh grew up in a signing Deaf family and was thus exposed to SASL from birth. He was using the handshapes intermittently his first year in the preschool (at age 4 years). It is clear from the fluency with which he “played” with handshapes in all the stages specified by Boyes Braem that he had mastered them according to age levels. In the clip, it can be seen that the other learners needed input from the Deaf assistant, but that Josh used the following handshapes with ease:

Stage I:

- The 5 handshape in the sign AFRIKAANS
- The 5 handshape in HELICOPTER place on the G handshape of the non-dominant hand
- The S handshape in DRIVE

Stage II:

- The O handshape, opening and closing in AMBULANCE

Stage III:


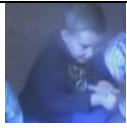

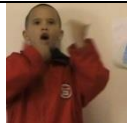



- The H handshape in TRAIN
- The V handshape for RAIL TRACK

Stage IV:

- The T handshape in TRAFFIC



**5.2.2.2 Discourse skills**

Josh Russell	Josh Russell	Josh Russell	Josh Russell	Josh Russell	Josh Russell	Josh Russell	Josh Russell
							
Transport	The worm	My family	I go swimming	Going to the beach	In the class	The three little pigs	The animals play soccer
<b>CLIP 10</b> Grade 0 2011	<b>CLIP 11</b> Grade 0 2011	<b>CLIP 12</b> Grade R Feb 2012	<b>CLIP 13</b> Grade R April 2012	<b>CLIP 14</b> Grade R Oct 2012	<b>CLIP 15</b> Grade 1 Feb 2013	<b>CLIP 16</b> Grade 1 April 2013	<b>CLIP 17</b> Grade 1 Oct 2013

**Grade 0 (2011)**

*See DVD: Clip 10*

<b>Clip 10 ‘Transport’ (Grade 0: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
<p><i>Reth. question</i> AFRIKAANS <i>head nod</i> YES YES TRANSPORT TRANSPORT TRANSPORT (<i>Josh plays with the sign</i>)</p> <p style="text-align: right;"><i>Y/N question</i></p> <p><i>Teacher:</i> TRANSPORT ALL SAME <i>headshake</i> NO NO</p>	<p>Are you speaking Afrikaans?</p> <p>Yes, yes you do. Transport. Transport. Transport (<i>Here he is playing with the sign, while the rest of the class is trying to produce the sign.</i>) <i>The teacher asks:</i> Is all transport the same?</p> <p>No, no.</p>

In this recording, it is clear that Josh was producing more than mere signs; he was communicating with his teacher. He noticed, through lip-reading, when she uttered an Afrikaans word. Throughout the clip, it can be seen that he was far more advanced than the rest of the class. He was the only child in his class born into a Deaf family. The teacher asked the following yes/no question: “Would you like to pack out the transport pictures using road, air or water?” His answer demonstrates that he was on par with his hearing peers in terms of language acquisition.

*See DVD: Clip 11*

<b>Clip 11 ‘Worm’ (Grade 0: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
FIRST <i>(indicated on fingers)</i> WORM SECOND <i>(indicated on fingers)</i> TORTOISE THIRD <i>(indicated on fingers)</i> CAT FOURTH <i>(indicated on fingers)</i> DOG TOGETHER-PLAY	Firstly the worm, secondly the tortoise, thirdly the cat and the dog play together.

In this clip, Josh was telling a story. The translation of one of his SASL sentences is “The worm, the tortoise, the cat and the dog play together”. The structure, sequencing and verb formation were perfectly signed: WORM TORTOISE CAT DOG TOGETHER-PLAY.

**Grade R (2012)**

*See DVD: Clip 12*

<b>Clip 12 ‘My family’ (Grade R: February 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
HOME	Home.
SISTER	Sister.
SWIM	Swim.
CLOUD++	Clouds.
CLOUD++	Clouds.
SUN	Sun.
REMOTE-CONTROL	Remote control.
TREE	Tree.
SORRY FORGET	Sorry, I forget to mention myself.
THIS ME	This is me.

Josh had planned his narration by drawing his family. In this clip, he explained very confidently what he had drawn, but did not use full sentences. Rather, he was merely naming the objects in his drawing. In the end, he apologised because he had forgotten to mention himself.

*See DVD: Clip 13*

<b>Clip 13 ‘I go swimming’ (Grade R: April 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
NOW ME HOME SWIM PLAY- PLAY	At home, I go for a swim. I am playing.

<p><i>CL-4 eyes opened wide</i></p> <p>WATER-MOUTH-INTO FATHER SEE RUN</p> <p><i>gaze down puff cheeks</i></p> <p>DIVE WATER-INTO GRAB ME PUMP CHEST WATER OUT <i>neg</i></p> <p>WATER-IN NEVER-AGAIN FINISH</p>	<p>Then I start drowning. Father sees me. He runs to help.</p> <p>He dives into the water. He grabs me. He pumps my chest until the water comes out.</p> <p>I will never again get into the water. I have finished.</p>
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As in the case of the previous recording, Josh had first planned his narrative by drawing that about which he wanted to speak. This is the beginning of prepared signing. His language was expressive, but he used 10 sentences with the correct verb agreement and a good beginning, middle and end. His story builds up to an interesting climax.

**See DVD: Clip 14**

<b>Clip 14 ‘Going to the beach’ (Grade R: October 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
GIRL MOTHER SEA GO <i>V-CL lf – rt (directional verb)</i>	The girl and her mother go to the beach.
GIRL MOTHER WALK GIRL EXCITED MOTHER SAY SUNTAN-PUT-ON IMPORTANT <i>r-shift eye gaze down</i>	The girl and mother walk to the sea. The girl is excited. Mother says she has to put suntan lotion on. It is important
SUN DANGEROUS <i>r-shift neg.</i>	because the sun is dangerous.
GIRL DON’T-WANT <i>r-shift eye gaze down</i>	The girl does not want to put suntan lotion on.
MOTHER SAY MUST	Mother says she must.
IMPORTANT <i>r-shift quick gaze upwards (neg)</i>	It is important,
GIRL NO DON’T-WANT UMBRELLA MOTHER SIT <i>V-CL (rep. movement)</i>	but the girl does not want to. Mother sits under the umbrella
LOOK-AROUND GIRL PLAY <i>repeat</i>	and looks around. The girl plays

BUILD++ <i>dir. verb rt - lf</i>	and builds in the sand.
MOTHER SAY <u>HOME GO</u> <i>V-CL mov. lf - rt</i>	Mother says they have to go home.
TWO WALK HOME	The two walk home.
WALK FEEL SORE	While walking, she feels sore.
FINISH ( <i>pause</i> )	This part of my story is finished.
FATHER GIRL SEA GO	Father goes to the beach with the girl.
TWO WALK	The two walk to the beach.
UMBERELLA-OPEN	They open the umbrella.
FATHER SAY SUNTAN-PUT-ON MUST <i>r-shift aff.</i>	Father says the girl must put on suntan lotion.
GIRL AGREE	The girl agrees.
FATHER HELP SUNTAN PUT-ON	Father helps her to put suntan lotion on.
PUT-ON FACE	He also applies it to her face.
HAT-PUT-ON	She puts her hat on.
PLAY SAND	She plays in the sand.
<i>dir. verb rt - lf</i>	Father calls her to go home.
FATHER SAY <u>HOME GO</u> <i>V-mov. lf - rt</i>	
WALK	They walk home.
BATH	She baths herself
SLEEP WELL	and sleeps well.

Here, Josh told a story of a girl and her parents visiting the beach. His sentences followed the correct SASL word order, and his facial expression helped to convey the correct meaning of adjectives and adverbs. He compared the first visit to the beach with the mother and the second visit to the beach with her father. First the girl refused to put on suntan lotion and had to bear the consequences, namely being very sore. She learned from this experience and agreed to protect herself against the sun, which paid off. Josh used 30 sentences in this narrative. The two scenarios he sketched indicate excellent reasoning skills. As his first language (SASL) has been developing since birth, he can use SASL well to demonstrate his good cognition and reasoning skills.

**Grade 1 (2013)****See DVD: Clip 15**

<b>Clip 15 ‘In the class’ (Grade 1: February 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
CHILD++ SCHOOL WORK	The children have to work at school.
$\overline{\text{WORK REFUSE}}$ <i>neg</i>	They refuse to do the work.
$\overline{\text{TEACHER SAY MUST WORK}}$ <i>r-shift</i>	The teacher says that they have to do the work.
WRITE	They start writing.
AGAIN PAPER THROW	Then they start throwing bits of paper around.
$\overline{\text{CHILD++ JUMP-UP-AND-DOWN}}$ <i>r-shift</i>	The children jump up and down
$\overline{\text{SHOUT}}$ <i>gaze down</i>	and shout.
$\overline{\text{TEACHER WARN}}$ <i>r-shift</i>	The teacher warns them.
$\overline{\text{TEACHER FURIOUS}}$ <i>r-shift</i>	The teacher is furious.
FINISH	I have finished my story.

In this first recording of his Grade 1 year, Josh told the story of children who did not want to do their work at school and their teacher who was warning them. His story was told with much expression. He demonstrated mastery of more sophisticated verb use and of grammatical conventions. He used role shifting to indicate who was speaking and verb inflections to show how the actions were performed, e.g. WORK-WORK-WORK. The story was told confidently with lots of humor and expression, although it was very short (eight sentences).

**See DVD: Clip 16**

<b>Clip 16 ‘The three little pigs’ (Grade 1: April 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
TITLE – PIG++ THREE ( <i>counting</i> )	The title of my story: The three little pigs.
$\overline{\text{SAY BYE-BYE}}$ <i>r-shift</i>	They say goodbye
$\overline{\text{THREE STROLL-STROLL}}$ <i>5-CL strolling</i>	And the three of them stroll off.
FIRST ONE HOME	The first pig starts planning his home.
TREE CHOP-CHOP	He chops down a tree.
$\overline{\text{TREE FALL}}$ <i>5-CL falling</i>	The tree falls
TREE CHOP-UP	and he chops the tree up.

<p>CHOP BRANCH++ <u>(2h)5 claw-CL</u></p> <p>WOOD GATHER <u>(2h)5 claw-CL</u></p> <p>TIE-UP CARRY</p> <p>HOUSE BUILD <u>(2h)5-CL</u></p> <p>SECOND PIG WALK <u>(2h)1-CL</u></p> <p>TALL GRASS CLIMB-OVER GRASS CUT TIE-UP CARRY SHOULDER-ON HOUSE BUILD <u>mm</u></p> <p>THINK</p> <p>IDEA GET (<i>eyes opened wide</i>) SAND DIG BRICKS HARD MAKE <u>(2h)5-CL</u></p> <p>WOLF WALK++ (<i>repeat</i>) WOLF MOUTH SPRAY USE(<i>r-shift</i>)</p> <p>TOOTH++ CLEAN(<i>r-shift</i>) <u>puff cheeks (2h)5-CL (flying)</u></p> <p>BLOW++ HOUSE <i>puff cheeks</i></p> <p>FIRST HOUSE FALL PIG RUN AFRAID SECOND PIG DOOR KNOCK LIGHT FLICKER <u>t</u></p> <p>WOLF PIG++ AFRAID-OF WOLF WALK++ <u>(2h)5-CL (flying)</u></p> <p>HOUSE-BLOW-AWAY PIG++ RUN THIRD PIG DOOR KNOCK WOLF COME WOLF BLOW-BLOW-MORE HOUSE STRONG-STAND <u>puff cheeks</u></p> <p>WOLF BLOW++ WOLF ROOF CLIMB-ON CROSS <u>breath-out</u></p> <p>PIG++ RELIEVE <u>(2h)V-CL</u></p>	<p>He chops off the branches and gathers the wood.</p> <p>He ties the logs together and carries them off on his shoulder. He builds his house.</p> <p>The second pig walks and walks.</p> <p>He climbs over some tall grass. He cuts some grass. He ties it up and carries it on his shoulder. He then builds his house. The third pig walks and walks, then stops and thinks.... He gets the idea to dig up some sand.</p> <p>He makes strong bricks.</p> <p>Wolf walks with determination. Wolf opens his mouth and sprays breath freshener. He flosses his teeth. He blows and blows in the direction of the house.</p> <p>The first house collapses. The pig runs away scared. He knocks on the second pig's door. The light flickers.</p> <p>The pigs are afraid of the wolf. The wolf walks up to the house.</p> <p>He blows the house away. The two pigs run to the house of the third pig. They knock on the door. The wolf walks to the house. The wolf blows and blows. The house is strong and keeps standing.</p> <p>He blows even harder. The wolf climbs on the roof. He is cross.</p> <p>The pigs feel relieved</p>
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LOOK EACH-OTHER FINISH	and look at each other. My story is finished.
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Here, Josh was retelling the story of the Three Little Deaf Pigs after watching a DVD of a Deaf role model signing this story. He used about 41 sentences at a sophisticated level of SASL. He used nouns, verbs, adverbs, adjectives and prepositions very well. The classifiers he was using were on a very advanced level, with each classifier suiting its agent.

*See DVD: Clip 17*

Clip 17 'The animals play soccer' (Grade 1: October 2013)	
SASL GLOSS	English voiced version
TITLE	The title:
LION LEOPARD	Lion and Leopard play soccer in the forest
MOUNTAIN FOREST	near the mountain.
SOCCER PLAY	
<i>puff cheeks</i>	
BALL KICK	They kick the ball.
<i>look up follow ball</i>	
BALL HIGH UP	It goes high up in the air.
<i>r-shift</i>	
BIRD++ FLY BALL AMONG BIRD++	It even gets amongst the birds flying in the sky.
<i>r-shift</i>	
SPRINGBUCK RUN-RUN	Springbuck runs fast
FALL	but then falls.
<i>O-CL (dribbling)</i>	
LION LEOPARD DRIBBLE-BALL-ON-	Lion and Leopard dribble the ball on their
<i>B-CL</i>	feet.
FOOT	
RUN	They run.
<i>r-shift (look up in air)</i>	
KANGAROO KICK LOOK BALL IN AIR	Kangaroo kicks and looks up.
RUN	The ball is in the air.
HIPPOPOTAMUS RUN BALL KICK	He runs.
<i>H-CL</i>	Hippopotamus runs and kicks the ball.
HIPPOPOTAMUS SLIP	Hippopotamus slips.
LION LEOPARD LOOK	Lion and leopard look.
PEOPLE STADIUM SIT	People are sitting in the stadium.
<i>puff cheeks</i> <i>look-up</i>	Animal kicks the ball through the goal post.
ANIMAL GOAL KICK THROUGH GOAL	
POST	
ALL PEOPLE HAPPY	All the people are happy.
ENJOY GAME	They enjoy the game.

In this recording, Josh was telling a story about animals playing soccer. He used language of a complex nature. He beautifully used the plural classifier for “many trees”. His discourse skills could be said to be on par with those of his hearing peers. The creative way in which he tells his story indicates that his L1 is in place and has a firm foundation. His story is shorter (17 sentences) but very descriptive.

### 5.2.3 Reading development in Grade 1 (2013): Josh Russell

Josh Russell	Josh Russell	Josh Russell
		
<b>CLIP 18</b> Grade 1 February 2013	<b>CLIP 19</b> Grade 1 April 2013	<b>CLIP 20</b> Grade 1 October 2013

**February 2013: (See DVD Clip 18).** At the beginning of his Grade 1 year, Josh read three-word sentences fluently, first silently in Afrikaans, and then signing the contents in grammatical SASL. The fact that he could sign what he had read without “parroting” the Afrikaans word by word was proof of his understanding of the Afrikaans text. His pointing to the objects in the pictures is additional evidence of his understanding.

**April 2013: (See DVD Clip 19).** Josh was here trying to add voice to his reading of the Afrikaans text, although one can hardly hear what he was saying. It however appeared to make him feel as if he was “really reading Afrikaans with voice”. After each sentence, he was signing what he had read, offering evidence that he had understood what the Afrikaans text was saying. His SASL sentence structure when translating from Afrikaans into SASL was fully grammatical. This process to switch from Afrikaans structure to SASL structure is a complex process, which he had mastered well.

**October 2013: (See DVD Clip 20).** The last video material recorded is of unprepared reading, meaning that the context and content of the story was not explained in the SASL class prior to the reading taking place. The texts were prepared by the class teacher only the afternoon before. I



specifically asked the class teacher to do that so that we can record it first thing the next morning. This ensured that there could be no time to prepare the learners. The goal of the unprepared reading was to see if the bilingual approach to reading was rendering the expected results. In this recording, Josh read the story silently, signed it to himself and then started drawing (as required) without any hesitation. He drew the overweight girl eating the red apple clearly. It is interesting how he coloured in the umbrella and the dress: The text read that the dress was purple and green, and the umbrella was yellow and orange. He coloured in half of the dress purple and half of it green and did likewise with the umbrella – half of it yellow and half of it orange. Regardless of how he had visualised the design and colours mentally upon reading the text, all the information in the text was contained in his picture – clear evidence that he had understood the whole text.

### **5.3 Case study 3: Riëtte Siebert**

#### **5.3.1 Background information: Riëtte Siebert**

##### **5.3.1.1 Home background**

Riëtte is the only child of a single parent. She was born in 2005 and at the end of 2008 she was diagnosed as profoundly deaf. She lives with her mother and grandmother. Her grandmother plays a prominent role in the upbringing of Riëtte and at times seems to be the dominant caregiver. The family lived in a large West Coast town, but moved to Worcester to be able to enroll Riëtte at De la Bat School for the Deaf. Prior to her enrolment at De la Bat, the family had taken her to the Carel du Toit Centre where they participated in a parent guidance programme once every 3 months.

##### **5.3.1.2 Hearing and amplification history**

Riëtte had recurring ear infections and contracted German measles at age 18 months. At 2 years, it was discovered that Riëtte was deaf. By the time the family visited the Carel du Toit Centre, Riëtte had already been fitted with hearing aids (at the age of 3 years 8 months), but did not receive sufficient amplification from them. Other hearing aids were recommended as well as an FM system, but the cost was too high for the family's budget. Riëtte visited a speech therapist as well as an occupational therapist during her time at Carel du Toit. When she came to De la Bat,

she was tested by the audiologist who confirmed a profound bilateral hearing loss (see Figure 5.3).

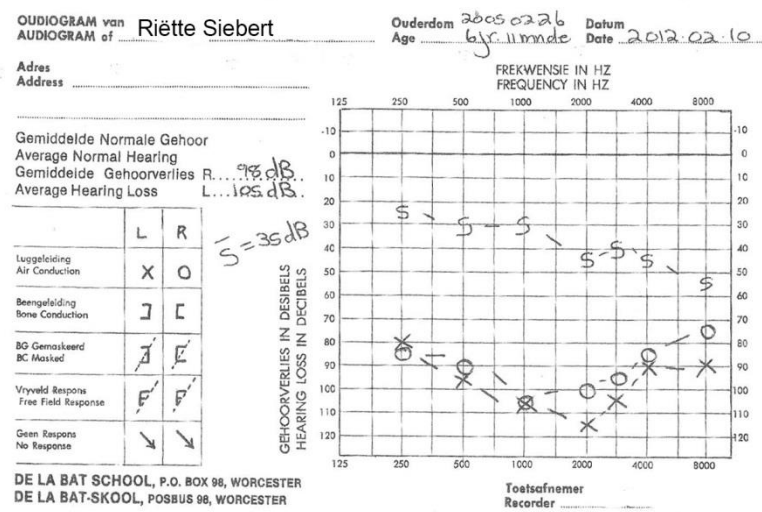


Figure 5.3. Riëtte Siebert's audiogram

### 5.3.1.3 Medical, emotional and sensory problems

As stated above, Riëtte has had German measles and recurring otitis media. She showed aggression towards strangers, did not eat in the presence of others, and demonstrated serious sensory integration problems. She was tactile oversensitive or insensitive, and could not tolerate people touching her. She also hurt herself (without showing any reaction to the pain) through head banging, pinching and scratching until she bled. Riëtte presented with language backlogs and showed many symptoms associated with autism. She was prescribed medication by Tygerberg Hospital of the type often prescribed to children with attention deficit hyperactivity disorder and autism.

### 5.3.1.4 Educational history and language exposure

Riëtte was placed in a special preschool class for Deaf learners with autism in March 2010. Within this structured, safe environment, Riëtte made such good progress that she was then placed in an ordinary class for Deaf learners in Pre-Grade R (i.e., Grade 0) in 2011. In her teacher's opinion, Riëtte coped well in the ordinary stream but was underperforming due to a lack of self-confidence. In 2012, Riëtte progressed to Grade R and did well. In 2013, she progressed to



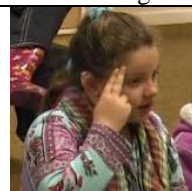
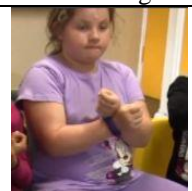
Grade 1. Here, her progress was excellent, especially in language (SASL as L1) and in reading (in Afrikaans L2).

**5.3.1.5 Additional information**

Riëtte enjoys school and is now a friendly, confident girl. However, the same boundaries that are in place at school (particularly in the classroom) are not in place at home. Riëtte is taking advantage of that and at times acts in a manipulative manner. The medication for autism and that for attention deficit hyperactive disorder have been discontinued.

**5.3.2 Language development in Grades 0 and R (2011 to 2012): Riëtte Siebert**

**5.3.2.1 Handshape**

Stage I	Stage II	Stage III	Stage IV
			
Riëtte producing a 5-hand	Riëtte producing an O-hand	Riëtte producing a H-hand	Riëtte producing a T-hand
A-hand, 5-hand, G-hand (Clip Riëtte Handshapes)	O-hand	H-hand, Y-hand, D-hand, V hand	T-hand
<b>Clip 21</b>			

Riëtte grew up in a home without any SASL. She started acquiring handshapes only at the age of 5 years. Up until then, she used gestures devised by the family. After it was found that her autistic traits were not because of the presence of autism but partly because of her frustration at not being able to communicate effectively, she received exposure to sign language in significant quantities and of good quality; thereafter, she started acquiring handshapes speedily. All four stages of handshape acquisition had been mastered within her first year of formal SASL training. She used the following handshapes with ease:

Stage I:

- The 5 handshape in the sign FATHER
- The 5 handshape in WATERFALL placed on the A hand of the non-dominant hand
- The A handshape in BROTHER
- The G handshape in BEE

Stage II:

- The O handshape in MOTHER









Stage III:

- The H handshape in SISTER
- The V handshape (Bent V) for SNAKE
- The Y handshape in AIRPORT
- The D handshape as in the name DUDU

Stage IV:

- The T handshape in TAXI

**5.3.2.2 Discourse skills**

Riëtte Siebert	Riëtte Siebert	Riëtte Siebert	Riëtte Siebert	Riëtte Siebert	Riëtte Siebert	Riëtte Siebert	Riëtte Siebert
							
Incoherent use of random signs	Transport	My holiday	The outing (with guidance)	The Picnic	My family	My dog	Picking fruit and planting vegetables
CLIP 22 Grade 0 2011	CLIP 23 Grade 0 2011	CLIP 24 Grade R Feb 2012	CLIP 25 Grade R April 2012	CLIP 26 Grade R Oct 2013	CLIP 27 Grade 1 Feb 2013	CLIP 28 Grade 1 April 2013	CLIP 29 Grade 1 Oct 2013

**Grade 0 (2011)**

*See DVD: Clip 22*

<b>Clip 22 (incoherent signing) (Grade 0: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
PUMPKIN LETTUCE <i>Handshapes are produced very hesitantly.</i>	Pumpkin. Lettuce. <i>Her handshapes are produced very hesitantly.</i>

Riëtte was not sure of the handshapes for the different signs. She was actually imitating her classmates and was producing loose signs clumsily.

*See DVD: Clip 23*

<b>Clip 23 ‘Transport’ (Grade 0: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
<i>headshake</i> NO NO	No, no.
<i>affirmation</i> YES YES	Yes, yes.
MOTORBIKE	Motorbike.
NO NO ( <i>Using different handshapes to sign NO</i> )	No, no.
YES YES	Yes, yes.
BOAT	Boat.
NO-YES-NO	No, yes, no.

During this recording, Riëtte was still not able to produce a monologue. She did however take part in the conversation very eagerly by adding her part – whether she agreed or not with what the teacher was saying. She was giving input with one-sign or two-sign comments, indicating that she was at the two-sign stage.

*See DVD: Clip 24*

<b>Clip 24 ‘My holiday’ (Grade R: February 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
<i>Draws teacher’s attention to scarf</i>	<i>Riëtte draws the teacher’s attention to her scarf and starts a conversation.</i>
LOOK	Look.
LOOK ME ( <i>point</i> )	Look at me.
PERFUME SMELL SCARF ( <i>tries to get teacher’s attention</i> )	I smell the perfume on the scarf ( <i>What could have led to a conversation was ignored</i> )
MOTHER BROTHER <i>Y/N question</i>	Mother ... Brother ...
HEAR SPEAK SOUND ( <i>teacher ignores question</i> )	I hear you uttering sounds? ( <i>The teacher however ignores her</i> )
BROTHER	Brother.
FATHER	Father.
SISTER	Sister.
ORANGE BAG	Orange bag.
BROTHER	Brother.
PINK	Pink.
SISTER	Sister.

GREY	Grey.
------	-------

Interestingly, Riëtte here tried to initiate a conversation with her teacher. She attempted to draw the teacher's attention to her scarf. She pointed to her scarf and signed:

LOOK

LOOK ME (*point*)

PERFUME SMELL SCARF

Riëtte opened up an opportunity for the teacher to lead her in conducting a whole dialogue. The teacher however did not make use of the moment. Riëtte's remarks showed that she was ready to start spontaneous communication. She showed that she had entered the four-sign stage and was possibly ready for an even more complex stage, even though the answers expected from her in this recording often entailed only one- or two-sign utterances. Riëtte made the signs with confidence. She used neatly formed handshapes, the correct location, correct palm orientation and correct facial expression.

Riëtte again tried to start a conversation by telling the teacher that she HEAR SPEAK SOUND, implicating that she heard the teacher speaking while signing. This could again have been used as an opportunity for a full conversation.

### Grade R (2012)

*See DVD: Clip 25*

Clip 25 'The outing' (Grade R: April 2012)	
SASL GLOSS	English version
DIDI HONEYBIRD SEE <i>r-shift</i> <span style="float: right;"><i>neg</i></span>	Didi sees a honeybird.
DIDI DUDU SNAKE STEP-ON NO	"Didi and Dudu, you must not step onto a snake".
WALK-WALK DREAM NO ( <i>r-shift</i> )	"Watch out when walking".
NEAR WATERFALL DIDI DUDU <u>5 spread-CL</u>	Near the waterfall, Didi and Dudu spread the blanket.
BLANKET SPREAD-OPEN	
EVERYONE MOMMY DADDY	Everybody, Mommy, Daddy and Brother sit
BROTHER SIT	down.

Although Riëtte was here being guided by pictures which she had sequenced, she was using five well-structured five- to six-sign sentences. In this narration, Riëtte clearly showed that she was ready for fluent discourse.

*See DVD: Clip 26*

<b>Clip 26 ‘The picnic’ (Grade R: October 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
<i>cl-4</i> MOMMY DADDY DIDI DUDU <u>WALK</u> ++	Mommy, Daddy, Didi and Dudu go for a walk.
THEY NEW BIRDS SEE FLOWERS BEAUTIFUL <u>V-CL</u> WALK++	They see new birds and beautiful flowers.  They are walking.
<u>5 spread-CL</u> BLANKET <u>THROW-OPEN</u> <i>Open A-CL    Open A-CL    Open A-CL</i>	They throw open the blanket.
DIDI MOMMY SIT DADDY SIT DUDU SIT <i>5 pinch-CL</i>	Didi, Mommy, Daddy and Dudu sit down.
DIDI EAT++ FINISH <i>1 bent-CL/index bent-CL</i>	Didi eats. Once finished,  she goes for a walk.
DIDI WALK BEE HER STING CALL MOMMY MOMMY HELP <i>dir. verb rt</i>	A bee stings her. She calls for help, “Mommy, Mommy, help!”
MOMMY HER HELP MOMMY HER COMFORT	Mommy helps her. Mommy comforts her.

With the knowledge of the previous sequenced picture story, Riëtte in this recording now very confidently told her own story of what had happened on the picnic. Without any assistance, she gave her own version of the events. Riëtte used 13 well-structured complex sentences. At times, she swapped the noun and adjective. For example, the second sentence should have been BIRDS NEW SEE. It was interesting to see how she did her placement of the family members sitting down on the blanket. This was done skillfully. She started using classifiers naturally as can be seen in the first sentence where she used the 4-hand classifier (CL-4) for Didi, Dudu, Mommy and Daddy walking.

**Grade 1 (2013)***See DVD: Clip 27*

<b>Clip 27 ‘Family’ (Grade 1: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
FAMILY MINE ( <i>points</i> )	This is my family.
HERE NAME MINE R----- ( <i>Afr. mouthing while fs</i> )	Here am I, my name is R-----.
SURNAME MINE S-----	My surname is S-----.
HERE MY FACIAL NAME -----	My facial name is -----.
HERE NAME MY MOTHER: ----- <i>fs</i>	My mother’s name is ----- (fingerspelling).
HERE NAME MY FATHER P-A-P-P-A	My father’s name is Daddy.
TOGETHER STAY	We stay together.

In this first recording in Grade 1, Riëtte gave her first “formal” speech, and she was visibly more nervous than during previous recordings where she could set out pictures and talk about them or watch a DVD and talk about it. The speech was very short. She uttered only a few sentences about her family, but was able to do so without her family members or a picture of them being present. The placement of the family was done formally and correctly.

*See DVD: Clip 28*

<b>Clip 28 ‘My dog’ (Grade 1: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
ME DOG BUY	I am buying a dog.
ME SEE DOG BABY	I see a puppy.
<u>V-CL</u>	“Look, look, look!
LOOK ++	
<u>gaze downwards</u>	
SEE SMALL DOG CUTE	The small dog is cute”.
DOG COLOUR YELLOW	The dog’s colour is yellow.
BABY EXITED	The baby (dog) is excited.
<u>5-CL gaze rt</u>	
BABY HOUSE-IN CARRY	I carry the baby (dog) into the house.
BABY DOG WASH	I wash the dog.
SIGN LANGUAGE EXPLAIN	I explain in Sign Language.
BONE THROW	I throw a bone.
<u>(2h)5 claw-CL</u>	
PLAY RUN	The dog plays and runs.
<u>r-shift</u>	
DOG BONE BITE	The dog bites the bone
BRING ME	and brings it to me.



During this second recording in Grade 1, Riëtte was able to sign skillfully on the topic “My dog”. She signed her story about her dog using 12 to 13 sentences. Her sentence structure was good and she signed very fluently. Riëtte used role-shifting well to make her story clear and systematic. Her discourse skills were on par with those of hearing peers, and her creative and independent thinking and reasoning skills had clearly developed.

*See DVD: Clip 29*

<b>Clip 29 ‘Picking fruit’ (Grade 1: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
BONGI ( <i>facial name</i> ) TEACHER YOLANDI ( <i>facial name</i> ) TALK-TOGETHER	Bongi, the teacher and Yolandi talks to one another.
FRUIT VEGETABLE++ LIKE NICE EAT	It will be nice to eat fruit and vegetables.
YOLANDI ( <i>facial name</i> ) BONGI ( <i>facial name</i> ) I TELL	Yolandi tells Bongi
LOOK-OUT FRUIT VEGETABLES PICK BAG PUT-IN	to look out for fruit and vegetables to pick and to put them in a bag.
<i>r-shift</i>	
TEACHER ( <i>facial name</i> ) FRUIT PICK	The teacher also picks fruit.
<i>r-shift</i>	
BONGI ( <i>facial name</i> ) CHILDREN TELL HAND+++DIG	Bongi tells the children to start digging with their hands.
CHILD++ EXCITED	The children are excited.
CHILD++ RUN CLOTHES-PUT-ON	The children run to put their clothes on.
<i>4-CL</i>	
ROW++ -STAND	They stand in a row.
<i>5 claw-CL</i>	
BONGI ( <i>facial name</i> ) ROW WALK	Bongi also walks in a row.
<i>4 -CL</i>	
HELP-DIG	She helps to dig.
<i>f-CL</i>	
SEED SHARE SEED-SOW	They share the seeds to sow.
WATER SOIL	They water the soil.
WAIT HOUR HOUR+++	They wait for many hours.
<i>1-CL</i>	
SEED GROW-START	The seed start growing.
WAIT WAIT	They wait and wait.
LEAF++ ONE TWO THREE FOUR COME- OUT	Then the leaves come out – one, two, three, four.
YOLANDI ( <i>facial name</i> ) EXCITED THEY WIN	Yolandi is excited that they have succeeded.
TEACHER SAY GOOD PROUD	The teacher says that she is proud.
YOLANDI ( <i>facial name</i> ) TEACHER MAN	Yolandi, the teacher and a Deaf man walk together.
DEAF TOGETHER-WALK	
LOOK PLACE HIDE	They look for a place to hide.

<i>puff cheeks</i> WIND BLOW THEY TREE UNDER	The wind is blowing strongly. They are under the tree.
<i>r-shift</i> MAN HAT BLOW-AWAY	The wind blows the man’s hat away.
<i>r-shift</i> MAN SURPRISE YOLANDI ( <i>facial name</i> ) WALK SLOW IN FRONT HALLO HALLO YOLANDI ( <i>facial name</i> ) PLAY	The man is surprised. Yolandi walks slowly in front of them. “Hallo, hallo!”, she says. Yolandi plays.

Here, Riëtte retold a story to which she had been exposed in the SASL class. She however gave it a new twist. She was thinking creatively, bringing in the teacher who told the children to pick all the fruit. She stated that Bonggi told the children to help till the soil. The children sowed the seed, watered the seed and waited for hours and hours. Then suddenly they saw the plant coming through the soil. The children were excited. Riëtte then states that the teacher was proud. Then Riëtte started “stumbling”. Regardless of the stumbling, Riëtte was using complex sentences with very good non-manual features e.g. WIND BLOW was signed with puffed cheeks to convey the equivalent of the English adverb *strongly*. This story provides evidence of cognitive development and creative thinking.

### 5.3.3 Reading development in Grade 1 (2013): Riëtte Siebert

Riëtte Siebert	Riëtte Siebert	Riëtte Siebert
		
<b>CLIP 30</b> Grade 1 February 2013	<b>CLIP 31</b> Grade 1 April 2013	<b>CLIP 32</b> Grade 1 October 2013

**February 2013: (See DVD Clip 30).** During the first recording of reading in Grade 1, Riëtte read three-word sentences. She read them in Afrikaans first silently and then signed the contents using SASL. Although she was coping with this procedure, she still performed it with some hesitation. However, the fact that she signed what she had read without “parroting” the Afrikaans word by word was evidence of her comprehension of the text.

**April 2013: (See DVD Clip 31).** Riëtte's reading skills had improved significantly since the previous recording. Compared to her reading in February, she now read fluently. The speed with which she read the Afrikaans silently and then translated it into SASL was remarkable. Her SASL sentence structure was perfect. This process to switch from Afrikaans structure to SASL structure is a complex process, which she had mastered very well.

**October 2013: (See DVD Clip 32).** As was the case for Josh, the last video material was a recording of unprepared reading, meaning that the content of the story was not familiar to the learners and that the context of the story was not explained to them in the SASL class. Riëtte silently read the story that was given to her, signed it to herself meticulously, and then started drawing what she had understood from the written text. All provided details were included in her drawing. The boy was not placed correctly in the drawing, but when she had signed what she had understood, she had done so correctly. Riëtte's picture and her SASL translation provide evidence that she understood the written text.

## **5.4 Case study 4: Hilda Kruger**

### **5.4.1 Background information: Hilda Kruger**

#### **5.4.1.1 Home background**

Hilda was born in a large city in Gauteng in September 2004. She is her parents' only child. At the age of 2 years, Hilda was still only able to say "mamma". Until then, her parents, who are both hearing, thought that she was only slow to speak, but at this point in time they became concerned and took her for examinations. Her mother and father are both very supportive of her.

#### **5.4.1.2 Hearing and amplification history**

Hilda was diagnosed with profound bilateral, sensori-neural deafness at the age of 2 years and was fitted with hearing aids bilaterally. She did not seem to receive much benefit from them. At the age of 5 years, she received a cochlear implant. When tested at De la Bat School at the age of 6 years, the audiologist confirmed profound bilateral hearing loss. The cochlear implant was found to provide 48 dB of amplification (see Figure 5.4).

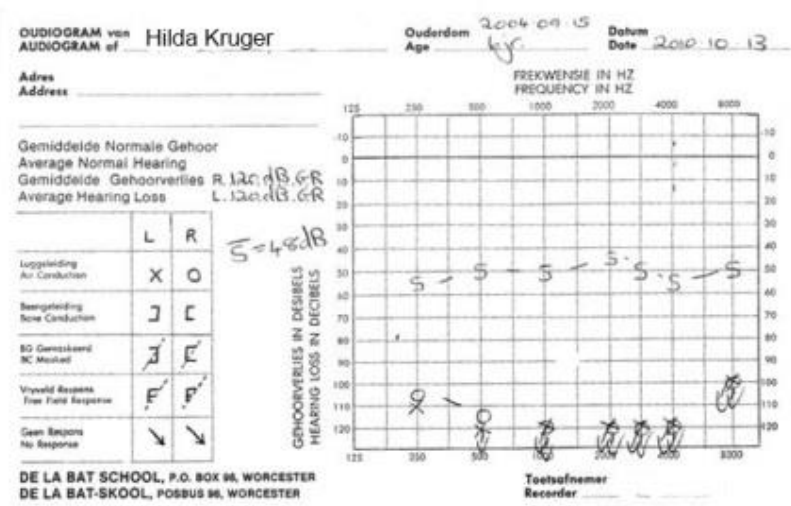


Figure 5.4. Hilda Kruger’s audiogram

### 5.4.1.3 Educational history and language exposure

Hilda attended the Carel du Toit Centre in Pretoria. The Centre follows an oral approach and Hilda was thus never exposed to SASL during her time at the Centre. She enrolled at De la Bat School when she was 5 years old and was then placed in Grade 0.

## 5.4.2 Language development in Grades 0 and R (2011 to 2012): Hilda Kruger

### 5.4.2.1 Handshape

Stage I	Stage II	Stage III	Stage IV
Hilda producing a 5 hand	Hilda producing the flat-O	Hilda producing the bend-H	Hilda producing the X-hand
5-Hand, A-hand	O-hand	H-hand	X-Hand
<b>Clip 33</b>			

Hilda grew up in a home without SASL. She only started acquiring handshapes at the age of five. Until then, she had used gestures created by the family. Hilda, being a very shy child, first just observed the signing in the classroom, not taking part at all. As she became comfortable and felt

at ease with her surroundings, she quickly mastered the four stages of handshape acquisition. Examples of handshapes being mastered in the different stages include the following:

Stage I:

- The 5 handshape in the sign FATHER
- The 5 handshape in PACK-IN placed on the 5- hand of the non-dominant hand
- The A handshape in BROTHER
- The A handshape as in GOOD

Stage II:

- The O handshape in MOTHER




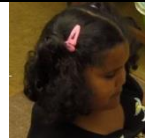




Stage III:

- The H handshape in SISTER

Stage IV:

- The X-handshape in TAXI

#### 5.4.2.2 Discourse skills

Hilda Kruger	Hilda Kruger	Hilda Kruger	Hilda Kruger	Hilda Kruger	Hilda Kruger	Hilda Kruger	Hilda Kruger
							
Incoherent use of random signs	My holiday	At home	The outing (with guidance)	The picnic	In the park	Mother helps me	Water conservation
CLIP 34 Grade 0 2011	CLIP 35 Grade 0 2011	CLIP 36 Grade R February 2012	CLIP 37 Grade R April 2012	CLIP 38 Grade R October 2013	CLIP 39 Grade 1 February 2013	CLIP 40 Grade 1 April 2013	CLIP 41 Grade 1 October 201

**Grade 0 (2011)***See DVD: Clip 34*

<b>Clip 34 ‘Transport’ (Grade 0: February 2011)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
CLOUD++	Clouds.
CLOUD++	Clouds.

When Hilda joined the class, she appeared to lack the confidence to take part in the vocabulary building task, as could also be seen in the first part of clip 33. In the current clip, however, one observes her answering yes/no questions with confidence. Although she was not yet able to produce large portions of discourse on her own, her knowledge of the language helped her to express more than just *yes* or *no*. For instance, she could add that the aeroplane the teacher is talking about belongs in the CLOUD++ (“clouds”), and not on the road, thus using one or two signs from her vocabulary. She very eagerly took part in the discussion on transport, although not using full sentences.

*See DVD: Clip 35*

<b>Clip 35 ‘My holiday’ (Date: Second semester 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
PACK++ ( <i>pause</i> )	We pack our clothes.
MOMMY DADDY SISTER BROTHER CLOTHES PACK	Mommy, Daddy, my sister and my brother pack their clothes.
AEROPLANE GRANDMA GRANDPA	We visit Grandpa and Grandma by aeroplane.

In this recoding, Hilda answered in two-sign sentences, e.g. CLOTHES PACK and then extended to longer sentences like DADDY MOMMY BROTHER SISTER GRANDPA GRANMA VISIT. She used repetitive utterances like PACK – PACK – PACK. Here, her signing was confident and her sentence structure and use of parameters were mostly correct.

**Grade R (2012)***See DVD: Clip 36*

<b>Clip 36 ‘At home’ (Grade R: February 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
BROTHER DVD WATCH	Brother watches a DVD.
DRIVE LONG	We take a long drive.
ME SLEEP	I sleep.
WAKE UP	I wake up
<i>lips protruding</i>	
DRIVE AROUND	and we are still driving around.
BACK HOME DRIVE	We drive back home.
EVENING FINISH SLEEP	In the evening, I sleep.
WAKE UP WALK WASH FACE	When I wake up, I go to wash my face.
TOOTH++ BRUSH	I brush my teeth.
SPIT-OUT	I spit out the water.
WALK SIT	I walk outside and sit down.
DOG PLAY	I play with the dog.
<i>gaze front</i>	
DVD WATCH	I watch a DVD.
FINISH GO DRIVE FAR	When I have finished, we go for a long drive.
BUY FINISH BACK HOME	When finished buying, we go back home.
ME GAME PLAY	I play a game.
EVENING SLEEP	That evening I sleep well.
BRUSH FINISH	I brush my teeth.
<i>lips protruding</i>	
DRIVE LONG SCHOOL	Then we took a long drive to school.

In this clip, Hilda signed her narrative independently. The narrative contained a lot of repetition. For example, DRIVE LONG, DRIVE AROUND. Despite the repetition, Hilda here told her own 19-sentence story.

*See DVD: Clip 37*

<b>Clip 37 ‘The outing’ (Grade R: April 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
THERE MANY TREE++ THERE	There are many trees there.
ROCK++ HONEYBIRD	On the rocks is a honey bird.
DADDY SAY DIDI DUDU SNAKE STEP-	Daddy says, “Didi and Dudu, don’t step on a snake”.
<i>neg.</i>	
ON-NOT	

In this recording, Hilda was being guided by pictures which she had sequenced. She was using well-structured, longer sentences, often with four to five signs per sentence. The picture sequence assisted her not to repeat during this narration (unlike in the February 2012 recording).

*See DVD: Clip 38*

<b>Clip 38 ‘The picnic’ (Grade R: October 2012)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
SPRING <i>wh-question</i>	It is spring.
SPRING WHAT	What is spring?
LEAF++ THERE <i>cl-4</i>	There are leaves everywhere.
DIDI DUDU MOMMY DADDY	Didi, Dudu, Mommy and Daddy walk.
THERE TREE++ WHOLE FOREST	There are many trees – a whole forest!
DIDI BLANKET SPREAD-OUT	Didi spreads the blanket.
EAT FINISH	They finish eating.
WALK <i>lips protruding</i>	They go for a walk.
SUN NICE WARM SHINE	The sun is shining, nice and warm.
FOOT BEE DIDI STING	A bee stings Didi on the foot.
DIDI SHOUT MOMMY HELP	Didi shouts for mommy to help.
OINTMENT RUB-ON	Mommy puts ointment on.
FINISH	My story is finished.

Hilda started her narrative with “It is spring” which she then repeated. DIDI DUDU MOMMY DADDY GO then followed, and she used a classifier for them walking (but she used the singular classifier for G-hand instead of the 4-hand for plural). Classifiers however take a long time to be acquired fully. Her story was well-structured and contained a beginning, middle and end. Her thoughts were conveyed without hesitation. She used 11 rather well formed sentences, making just one or two mistakes with sign formation and classifiers. Her use of intensifiers was good, e.g. SUN NICE WARM SHINE (done with protruding lips).

**Grade 1 (2013)**

*See DVD: Clip 39*

<b>Clip 39 ‘In the park’ (Grade 1: February 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
THIS ME ( <i>point</i> )	This is me.



THIS FLOWER++ ( <i>point</i> ) THIS GRASS ( <i>point</i> ) THIS SUN ( <i>point</i> )	These are flowers in the grass.  This is the sun.
--	---

Here, Hilda was giving her first prepared “speech” in Grade 1. She had drawn a picture of herself in the park amongst the flowers, but when she presented, she merely mentioned what there were, i.e., she made use of picture description rather than narration, which resulted in the teacher having to draw more information from her.

*See DVD: Clip 40*

<b>Clip 40 ‘Mother helps me’ (Grade 1: April 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
( <i>Point</i> ) THIS HOUSE MINE ME WALK SOMETHING FOOT MINE STICK ME CRY MOTHER RUN MOTHER ASK <i>wh-question</i> WHY CUT  <i>r-shift</i> GLASS DRINK FALL BREAK  MOTHER SORRY ME BED LIE MOTHER SPLINTER PULL-OUT <i>(2h)5-CL</i> OINTMENT PUT-ON BANDAGE PUT-ON MOMMY FINISH BETTER++	This is my house. I am walking. Something sticks into my foot and I start crying. Mother runs to me. Mother asks why my foot is cut.  “I drank from the glass, then it fell and broke.”  Mother says she is sorry for me. I lie down on the bed. Mother takes the splinter out.  She puts ointment on and puts a bandage on. Then she finishes. I feel much better.

In the second term of Grade 1, Hilda skillfully signed a story on the topic “Mommy helps me”. She was signing her story of 13 sentences about how she broke a glass and a splinter of glass pierced her foot and how Mommy then helped her. Her sentences were well-structured and her language use very fluent. Creative and independent thinking and reasoning skills were evident. Facial expression was used in a lively manner to support her story and language use.




Throughout the story she was using role shifting creatively. The picture was proof that she had planned her presentation beforehand. The fluent presentation showed that the presentation was well thought through. The confidence with which she presented can be viewed to be a result of her significant progress in language development in her L1.

*See DVD: Clip 41*

<b>Clip 41 ‘Water conservation’ (Grade 1: October 2013)</b>	
<b>SASL GLOSS</b>	<b>English version</b>
TOPIC - WATER CONSERVATION <span style="float: right;"><i>neg.</i></span>	The topic of my speech is “Water Conservation”.
FIRST ALL-OF-US MUST WATER WASTE NO <span style="float: right;"><i>neg.</i></span>	Firstly, none of us should waste water.
CAR WASH HOSE PIPE NO <span style="float: right;"><i>neg.</i></span>	Do not wash your car with a hosepipe.
SECOND FOR CLEANING YOURSELF <span style="float: right;"><i>neg.</i></span>	Secondly, for cleaning yourself do not fill the bath to the brim.
BATH WATER FULL USE NO <span style="float: right;"><i>nodding</i></span>	
FILL BATH HALFWAY GOOD (Look at own preparation to see if she is still on track)	Fill the bath only halfway. That is good practice.
THIRD TAP OPEN HAND WASH WATER RUN <span style="float: right;"><i>neg</i></span>	Thirdly, do not open the tap and wash your hands in running water.
NO PLUG PUT-IN FIRST WATER OPEN SMALL <span style="float: right;"><i>nodding</i></span>	Put the plug in first and only open the tap slightly.
HAND WASH PLUG OUT (Look at own preparation to see if she is still on track)	Wash your hands and pull out the plug.
WATER DRINK NOTHING BAD THIRSTY DIE CAN <span style="float: right;"><i>nod affirmation</i></span>	To drink no water is bad. You will get thirsty and you can die.
WATER DRINK DRINK GOOD <span style="float: right;"><i>nod affirmation</i></span>	It is good to drink a lot of water.
LAST FLOWER HOSF. WATER (all over) NO <span style="float: right;"><i>neg. nodding</i></span>	Lastly, do not water the flower with the hosepipe, spilling the water.
WATERING CAN USE GOOD	Use a watering can. That is good practice.
WATER SAVE MUST	We must all save water.

In this recording, Hilda was signing on the topic “Water Conservation”, which had been covered in the Life Orientation class. She had planned her narrative beforehand in blocks with pictures. This showed that she could work independently and systematically and that she could use her L1 (SASL) for creative work. She used language on a complex level, and did so with confidence. She made use of her grid to assist her with her arguments. The fact that she used higher levels of cognitive thinking is proof that her native language is in place. What I found impressive is that she did not only state a problem but she also proposed a solution to the problem. She made good use of negation and affirmation to strengthen her arguments. In terms of native language acquisition, she appeared on par with a hearing child.

### 5.4.3 Reading development in Grade 1 (2013): Hilda Kruger

Hilda Kruger	Hilda Kruger	Hilda Kruger
		
CLIP 42 Grade 1 February 2013	CLIP 43 Grade 1 April 2013	CLIP 44 Grade 1 October 2013

**February 2013:** (See DVD Clip 42). Approximately a month after the start of Grade 1, Hilda was reading a booklet containing three-word sentences and signing the content thereof in SASL. What is interesting is that she was seemingly reading in Afrikaans and signing the text in SASL almost simultaneously. The conversion to SASL was thus done instantaneously. It was clear that she understood what she was reading and was not “parroting” in SASL what she saw written in Afrikaans.

**April 2013:** (See DVD Clip 43). In this recording, the longer sentences in the Afrikaans text seemed to reduce the rate at which Hilda was reading. Here, Hilda first read the sentence and then signed it in SASL. The simultaneous interpretation observed two months prior was not evident in this recording. Her sentence structure was correct. When she read *Mamma en Pappa kyk op* (“Mommy and Daddy look up”), she looked up – possibly a sign that she was understanding what

she was reading. Hilda proved that she was making the connection between what she signed and the printed word.

***October 2013 (See DVD Clip 44).*** As for the previous two case studies, the last video material was a recording of unprepared reading. Hilda silently read the story that had been given to her. She then started drawing it. The story had lots of detail in it and she drew all the small details and then presented her story in SASL. Every colour and emotion and the correct number of flowers were drawn without hesitation. The picture with all the details and her confident SASL version afterwards were evidence of her understanding of the text.

## Chapter 6

### Summary and conclusions

#### 6.1 Summary of the main findings of this study

Despite the diverse circumstances of the four participants in terms of date of diagnosis, parental mastery of SASL, length of exposure to SASL and age of first exposure, and length of attendance of the school in which the SASL curriculum was piloted, they all showed notable progress in terms of SASL acquisition over the course of the study period, and they all managed to acquire the reading skills expected of a Grade 1 learner.<sup>37</sup> As was found in the case of hearing users of a spoken language, language competence appears to be a prerequisite for the development of literacy skills in deaf children (see Adams 1990; Gathercole and Baddeley 1993). The four children who were studied here were presumably successful readers because they had a solid foundation in their L1, SASL.

When considering the two research questions (repeated for ease of reference below), they seem to be inseparable as literacy acquisition cannot take place without language acquisition having taken place.

- What is the course of language development in SASL as L1 in young Deaf children following a newly introduced curriculum with SASL as both LoLT and school subject?
- What is the course of early reading development in L2 Afrikaans in young Deaf SASL users following a newly introduced curriculum with SASL as both LoLT and school subject?

The results of this study shows that the four study participants (as far as could be gathered by studying recordings of their language) followed the course of sign language development

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<sup>37</sup> Recall that the majority of Deaf South African learners leave school with the reading and writing ability of a 9-year-old (DEAFSA 2003: 8). It might not immediately seem significant that the Grade 1 participants reached a level of reading proficiency expected of Grade 1 learners, but when one considers the context in which this finding was made (namely that it is Deaf Grade 1 learners who are reading at a level expected of their grade-matched hearing peers) the finding appears more significant.

documented in the literature. Josh was the only participant born into a Deaf family where all core family members use SASL as L1. His language skills at the time of the first recording and also in some subsequent recordings were, as would be expected, very advanced in comparison to those of the other three participants.<sup>38</sup> The reason for this could be that during the critical period for language acquisition, when he was acutely predisposed to acquiring language, Josh was exposed to SASL, a natural language. After the SASL Home Language curriculum was implemented and SASL became the LOLT, Hannes, Riëtte and Hilda received continued exposure to SASL, upon which they excelled in terms of language acquisition. When the four participants were exposed to reading instruction at the beginning of their Grade 1 year using the bilingual-bicultural approach, Hannes, Riëtte and Hilda compared well to Josh in terms of reading skills. The data on reading skills were not collected over a long enough period for the second research question to be answered fully, as the **course** cannot be explained adequately. The results do indicate, however, that all four learners (despite different ages of first exposure to SASL) were able to acquire grade-appropriate reading skills and were able to read with comprehension in their L2.

In my opinion, if the SASL curriculum were implemented in Grade R (as prescribed) instead of in Grade 0 (as was the case), it would not have been possible for the participants to develop their reading skills to a level where they are able to read fluently at grade level in the first term of Grade 1. Following the SASL CAPS curriculum from the time of their enrolment in the school, their phonological, morphological, syntactical, semantic and pragmatic appear to have “come together” when using SASL by the time they reached Grade 1, although these were not necessarily taught explicitly. This study shows that there are benefits to a deaf child upon entering a school being immersed in one language only, until there is mastery of that language and then, after that foundation had been established, being exposed to the language of literacy in a purposeful manner.<sup>39</sup>

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<sup>38</sup> His discourse skills are at the time of writing still advanced compared to those of his classmates.

<sup>39</sup> In my opinion, based on my experience in Deaf education and a pilot project leader, this is the best manner of teaching literacy to Deaf children: exposure to sign language until there is a certain level of mastery and then exposure to an L2 in print form. As I did not do a comparative study, the results of the current study cannot prove or disprove that this manner of teaching literacy to Deaf children is indeed the most beneficial one.

## 6.2 Implications of the study for the teaching of literacy skills to Deaf learners

This study's findings replicate those of other, non-South Africa-based studies. As such, it could be said that the findings of this study have no new implications for the teaching of language and literacy skills in Deaf education, but merely confirm what was found to be the case abroad, namely that for language to be learned effectively, certain conditions must be met. At the very least, a child must have the following:

- (i) Early exposure to language. Josh is an example of a child who was exposed to an accessible language (SASL) during his biologically-determined critical period for acquiring language, as his mother, father and brother are Deaf native SASL users. The study indicated that early exposure to a language enables good proficiency in that language (as in the case of Josh), but that exposure within the critical period for language acquisition still allows for the development of good proficiency (as in the cases of Hannes, Riëtte and Hilda). One implication of this finding is that Deaf children can develop age-appropriate language skills if they are exposed to a natural human language such as SASL.
- (ii) Access to a language. Obviously early exposure to a language is not meaningful if it is a language that the child is not physically capable of accessing. Although the three participants who, unlike Josh, did not receive exposure to SASL from birth were all exposed to a human language (namely Afrikaans) from birth, this language was presented in a modality (oral-aural) inaccessible to them. Upon exposure to sign language, these three participants could "access a language".
- (iii) Proficient language role models. Language exposure should be provided from a person who is a more fluent speaker/user of the language than the child acquiring the language. In the case of Deaf children learning SASL and for whom there is no exposure to SASL outside of the school context, SASL exposure should come from fluent users of this language. (For this reason, part of the pilot project involved providing SASL training to teaching assistants, hostel parents and other adults or peers who communicate with children in a variety of situations, so that these persons could demonstrate the grammatically correct and idiomatic use of SASL signs and sentences.) These proficient

users of a language stimulate the growth of language in young children. In the case of Josh, this happened from birth onwards, but for the other three participants this only occurred upon their enrollment in the pilot school. A point related to the need for proficient role models is that not any teacher can teach the SASL CAPS curriculum successfully. Being proficient in SASL is not sufficient to qualify in a SASL-as-subject teacher. Training in SASL linguistics, in different genres of Deaf literature and in Deaf culture is needed, whether the teacher is hearing or Deaf. The role of Deaf teaching assistants should also not be underestimated. These assistants serve as language role models to Deaf learners, but them being fluent L1 users of SASL does not mean that they necessarily have metalinguistic knowledge of SASL. They thus need the same training as the teachers if they are to assist in the SASL-as-subject class.

- (iv) Interactions with other children to develop the ability to see things from a different point of view. Peer conversations in class, teacher-led class discussions, viewing recordings of peers etc. are of importance in this regard. Exposure to peers who are fluent in SASL can help compensate for the lack of exposure to SASL in the home that many deaf children of hearing parents experience. The SASL CAPS curriculum creates ample opportunity for such interactions with other children.

When any or all of the above conditions are not present, learners will find it very difficult to learn a language at school entry. This then can have a detrimental effect on the task of learning to map between L1 (SASL) and L2 (English/Afrikaans) literacy later in their school career. The results of this study strongly indicate that when SASL has been established before reading instruction commences, reading instruction is likely to be successful. The implication of this finding is that a Deaf child must know a sign language (or any other natural human language) before learning to read, and thus earlier exposure to SASL required in the case of Deaf learners. It is just not sufficient to receive first exposure to a L1 upon school entry only. Recall that Deaf American children with early ASL access reached the same linguistic milestones in their native SASL acquisition as did their hearing counterparts in English, therefore the earlier the exposure to sign language, the more advantageous for the Deaf child. Once a Deaf child acquired SASL, s/he learn how to map between sign language and print so that they can learn English or Afrikaans, as shown in the current study: Riëtte and Hilda were introduced to SASL and to Deaf role models at



the age of five. They progressed beyond expectation, as research had shown that by four to five years of age, children who have had access to language would have acquired the basic core grammatical structure of their language. At age five, Riëtte and Hilda were still “language-less”, yet they managed to acquire sufficient language by the beginning of Grade 1 to be able to learn to read in their L2. They managed to learn to read after being immersed in SASL in an attempt to fill the gap left by late exposure to SASL. The same could be said for Hannes who was exposed to SASL at an even older age.

If early exposure to sign language that enables sufficient language acquisition to allow to successful reading instruction to take place is to occur, then early identification of hearing loss in children is needed. Such earlier identification requires better cooperation between agencies in South Africa delivering services to hearing impaired children (e.g. the Departments of Health, of Social Development, of Early Childhood Development and of Education, DEAFSA and other NGOs). Legislation should be put in place to enforce neo-natal hearing screening. Parents of babies with hearing loss should be supported and advised by NGOs such as DEAFSA and Hi Hopes regarding language options for their deaf or hard-of-hearing children. Informed choices considering each child’s specific circumstances can cause deaf children to have adequate exposure (in terms of quality and quantity) to accessible linguistic input, in meaningful interactions, with others who are already capable users of the language. This will in turn have a significant impact on literacy levels of the Deaf in South African. The roll-out of the SASL CAPS Curriculum is a major step in the right direction to language acquisition and in turn impacts on literacy levels. It is the time from birth until the child is admitted to a school that advocacy and co-operation of the above mentioned agencies are most critical, bringing about early identification and intervention as well as family support to hearing parents of deaf children.

### **6.3 Strengths and limitations of the study**

The strength of the study is that it has a longitudinal nature, presenting the first developmental data on literacy acquisition in Deaf users of SASL. Limitations include that the case study design limits generalisability to general populations of Deaf children. Furthermore, the cases studied here was from one geographical location and one school only, and as such the circumstances in

other schools for the Deaf in other parts of the country were not considered. This is important as there is a disparity in resources, learning support material, as well as teaching methods amongst the South African schools for the Deaf. Also, the study investigated early reading development, but reading is only one aspect of literacy. The study paid no attention to the development of writing skills.

## **6.4 Directions for further research**

As SASL acquisition and the effect thereof on the literacy and academic development of Deaf learners are widely under-researched fields, there are many avenues for further research. Below, I mention some possibilities for further research.

It would be interesting to do a follow-up study with the four participants to monitor what the effects of the early acquisition of their reading skills will have on their school career and their general academic school performance. A good foundation in terms of reading skills has been laid during their Gr. 1 year, through the bilingual approach to teaching reading to Deaf learners. This in turn created an interest in books and, I hope, in the world books open up to their readers. One possible future research project would be to ascertain whether the participants' reading skills continue to remain age- and grade-appropriate and how these reading skills impact their academic functioning.

Another worth-while study would be to research not only Deaf learners' reading skills but also their writing skills in English or Afrikaans following their early acquisition of SASL as L1. During the project the focus was on first language acquisition and the influence it will have on their reading skills of a written language, but studying writing skills as well will offer a more comprehensive picture of literacy acquisition by young Deaf learners.

The input that Deaf children receive in class and the effect thereof, after the re-tooling of educators in all schools for the Deaf in the Western Cape during the SASL pilot project, could be an area for research in itself might be interesting but that might also assist in determining the degree of support that educators of the Deaf still need to bring education of the Deaf on par with

that of hearing learners. Uplifting Deaf education is an important matter as each South African child has the constitutionally protected right to quality and effective education. In the past, Deaf Education did not receive the same amount of attention and resources as education for hearing learners, partly because of ignorance of the Department of Education about SASL being a natural language, and also because of the stumbling block deafness creates in a country where SASL is not been acknowledged by the majority as a fully-fledged language. Now that SASL has been introduced as a school subject and as LoLT in SASL-registered schools, research is needed to inform the Department of Education of the continued needs of educators of the Deaf to fulfil their mandate of offering quality education to their SASL-using Deaf learners.

Research on how increased skills in SASL affect peer-interaction amongst Deaf learners in the classroom can generate valuable knowledge. Improved language skills and increased vocabulary size affect the cognitive development of a child and improved SASL language skills should thus have an effect on peer-interaction as well.

Another related area that deserves research attention is early intervention (in the age band 0 to 3 years) to ensure age-appropriate language acquisition and development in every deaf and hard-of-hearing child and the effect thereof on formal education upon school entry. Such research could assist in addressing the concern that acquiring sign language early will hamper a child's ability to learn a spoken language. In many cases, much time is devoted to teaching a Deaf child a spoken language (which s/he cannot hear and thus cannot truly access) during the critical period for language acquisition. The results of such research might alert parents and professionals to the plight of Deaf children: Due to insufficient family and community support (i.e., due to lack of exposure to an accessible, visual (sign) language) during the critical period for language acquisition, many Deaf children are needlessly stalled in their language acquisition until they commence formal schooling. Many deaf and hard-of-hearing children experience language deprivation, many to an extent that harms their educational, social-emotional and cognitive development. Research on the effect of early exposure to sign language might generate knowledge that can help parents make informed choices regarding early exposure of their Deaf children to sign language. That said, what has not yet been researched in a systematic manner is what early language exposure looks like for deaf and hard-of-hearing South African children.

This study discussed the exposure to spoken and sign language received from birth by four profoundly deaf children, but a systematic investigation of language exposure in the diverse South African context fell outside the scope of this study.

An under-researched topic is the effect that bilingualism/multilingualism has on the cognitive development of Deaf children. I am not aware of any published studies that compare Deaf bilinguals/multilinguals to age-matched hearing bilinguals/multilinguals in terms of, for instance, their reading and writing skills, cognitive development and problem-solving abilities.

As there is a great dearth of Learning and Teaching Support Material to support Deaf Education, systematic research into the developing Deaf-friendly, high quality material of this nature is indicated. One can start by ascertaining what the requirement of such material should be, before progressing to assessing the effect of using different kinds of material on the speed and accuracy with which Deaf learners learn to read.

A last possible research topic related to the current study to be mentioned here would be alternative assessment methods which will allow Deaf learners' knowledge of a subject to be tested independent of their L2 knowledge. Learners in Deaf education do not yet enjoy the same assessment opportunities that learners in mainstream schools or in schools for the blind enjoy. There is an opportunity for research findings to inform best practice regarding alternative assessment for Deaf learners and thereby contributing to equal opportunities for Deaf learners.

## **6.5 Conclusion**

Schick et al. (2006: v), in their book *Advances in the Sign Language Development of Deaf Children*, state that these are “exciting times in the history of language development research and the most exciting with regards to sign language development of Deaf children. Yet, for all of the research we have seen on the topic, the pieces of the puzzle still seem to be spread all over the table, in small interlocking slumps, but without revealing the bigger picture.” Lane et al. (1996:297) state that “the implications for most Deaf students, who must learn English as second language, are clear. Bilingual education using ASL as the language of the classroom will teach

subject matter better and it will impart background knowledge and skill that will facilitate learning English. As such Deaf students become bilingual, they will be more capable for a variety of cognitive tasks.” It was with these two quotations in mind that we developed a strategy to lay the foundation for SASL through the new SASL CAPS curriculum, using SASL as the child’s L1 to develop the child holistically. As soon as a SASL foundation had been laid, with handshapes, parameters, vocabulary and syntax in place, we could implement the bilingual approach described above – and do so successfully.

The results of this study indicate that language development must precede literacy acquisition; speech development can occur even later. Early speech development alone will not guarantee language and literacy skills. Sign language is a valid linguistic means of conveying thoughts, ideas and emotions and it enhances bilingual approaches in Deaf Education. Using SASL qualified professionals to teach SASL as subject together with a Deaf teaching assistant to serve as language role model for the Deaf children provides said children with a strong language base, which allows them to experience increased success in the broad range of educational subjects.

The head start that Josh as Deaf child of Deaf parents had indicated that early intervention and early exposure to sign language for Deaf children of hearing parents should become a priority in order to afford Deaf children of hearing parents equal opportunities. The SASL curriculum enabled language acquisition in the three children who had not been exposed to SASL from birth. Exposure to an L2 through a bilingual approach brought success in the mastery of reading Afrikaans in the case of all four participants.

In conclusion: With much earlier identification of hearing loss expectations are that deaf children will develop literacy abilities comparable to their hearing age-matched peers. However, it remains the case that many deaf children do not go on to develop age-appropriate reading and writing abilities due to late identification and exposure to an accessible L1. This then impacts negatively on the child’s holistic development. Earlier identification of hearing loss allows for earlier exposure to an accessible L1 and raises expectations that increasing numbers of deaf children will develop good language and literacy abilities.

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## Appendix A

### Parental consent form



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jou kennisvenoot • your knowledge partner

#### UNIVERSITEIT STELLENBOSCH INWILLIGING OM DEEL TE NEEM AAN NAVORSING

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#### **’n Onderzoek na die verloop van Suid Afrikaanse Gebaretaal (SAGT)-ontwikkeling en Afrikaanse leesontwikkeling deur die volg van die nuwe SAGT kurrikulum as skoolvak en as medium van instruksie**

U word gevra om toestemming te verleen dat data wat by De la Bat-skool oor u kind ingewin is tydens die Suid-Afrikaanse Gebaretaal-loodsprojek (2011–2013) gebruik word as deel van ’n Magistergraadstudie in Taalwetenskap in die Departement Algemene Taalwetenskap aan die Universiteit Stellenbosch. Die studie sal gedoen word deur Minna Steyn. Aangesien die studie deel vorm van ’n navorsingsprojek vir graaddoeleindes, sal die resultate in tesisvorm gepubliseer word. Dele van die tesis mag ook in vakwetenskaplike tydskrifte gepubliseer word of by akademiese of ander vergaderings voorgedra word.

#### **1. DOEL VAN DIE STUDIE**

Die doel van die studie is om te bepaal watter invloed die aanleer van Suid-Afrikaanse Gebaretaal (SAGT) op huistaalvlak het op die aanleer van Afrikaans, die tweede taal en die taal van gelettertheid. Dele van die data wat gedurende die SAGT-loodsprojek onder leiding van Minna Steyn (projekteier) ingesamel is, sal gebruik word vir die Magisterstudie. Die volgende twee fokuspeunte is van belang vir hierdie studie:

- Die verloop van taalontwikkeling in SAGT as eerste taal in jong dowe kinders deur die volg van die SAGT-kurrikulum met SAGT as skoolvak en ook as Taal van Onderrig en Leer.
- Die verloop van vroeë lees-ontwikkeling in Afrikaans/Engels as tweede taal in jong dowe SAGT-gebruikers met die gebruik van die nuut geïmplementeerde kurrikulum vir SAGT as skoolvak en Taal van Onderrig en Leer.

#### **2. PROSEDURES**

Indien u inwillig om aan die studie deel te neem, vra ons dat u skriftelike toestemming verleen dat

- materiaal en resultate wat gedurende die loodsprojek oor u kind ingesamel is, gebruik mag word vir hierdie studie. U verleen sulke toestemming deur hierdie vorm te teken. Let asseblief daarop dat indien toestem dat die beeldmateriaal van u kind gebruik mag word in hierdie studie, u mag besluit of die materiaal gebruik mag word soos dit opgeneem is of met die gesiggedeelte uitgeblok.
- Minna Steyn data oor u kind se punte vir SAGT en Afrikaans mag versamel uit u kind se skoolrekords.
- Minna Steyn agtergrondsinsligting oor u kind (byvoorbeeld geboortedatum, datum van diagnose, datum van toelating tot De la Bat-skool, aard en graad van gehoorinperking) uit u kind se rekord



by De la Bat-skool mag versamel. As daar enige benodigde inligting ontbreek, mag Minna Steyn u daarom vra. Let asseblief daarop dat u onder geen verpligting is om hierdie vrae te beantwoord nie.

Die volgende opnames van u kind sal bestudeer en geanaliseer word, sou u tot deelname aan die studie instem: begin-2011 (Graad Pre-R), begin-2012 (Graad R), Januarie 2013 (Graad 1), en Februarie 2013 (Graad 1). Die opnames sal op drie maniere geanaliseer word, naamlik in terme van aanleer van gebare, die aanleer van dialoogvaardighede en die aanleer van leesvaardighede (spesifiek leesspoed, vlotheid en begripsvaardighede).

### **3. MOONTLIKE RISIKO'S EN ONGEMAKLIKHEID**

Die deelnemers sal nie blootgestel word aan enige moontlike risiko's of ongemaklikheid weens hul deelname aan hierdie studie nie, want geen nuwe data gaan ingesamel word nie; slegs opnames wat reeds tydens die SAGT-projek gemaak is, gaan gebruik word. Indien u toestem dat u kind se opgeneemde materiaal sonder gesigsuitblokkering gebruik mag word, sal u kind ten volle sigbaar wees aan lesers van die tesis. Sou u ongemaklik hiermee wees, kan u aandui dat u kind volledig onherkenbaar uitgebeeld moet word in die tesis.

### **4. MOONTLIKE VOORDELE VIR PROEFPERSONE EN/OF VIR DIE SAMELEWING**

Die deelnemers sal geen persoonlike voordeel uit deelname aan die studie trek nie. Hul deelname sal wel bydra tot die uitbreiding van kennis oor hoe dowe kinders gebaretaal verwerf en leer lees.

### **5. VERGOEDING VIR DEELNAME**

Geen vergoeding word aan u of u kind aangebied vir deelname aan die studie nie. Deelname aan die studie sal ook nie vir u enigiets kos nie.

### **6. VERTROUOLIKHEID**

Geen name van enige deelnemers sal in die tesis of ander publikasie of voordrag genoem word nie; daar sal aan deelnemers 'n skuilnaam gegee word wat vir maklike verwysing gebruik sal word in die tesis. Die name van die deelnemers sal slegs aan Minna Steyn en haar studieleier, Frenette Southwood, bekend wees. Data sal voortgaan om op die perseel van die Nasionale Instituut vir Dowes in Worcester gestoor te word.

### **7. DEELNAME EN ONTTREKING**

U kan self besluit of die ingesamelde data oor u kind vir hierdie studie gebruik mag word of nie. Indien u inwillig tot die gebruik hiervan, kan u op enige stadium in die verloop van die studie u toestemming terugtrek sonder enige nadelige gevolge vir u of u kind. U kan ook weier om bepaalde vrae te beantwoord, maar steeds aan die studie deelneem.

### **8. IDENTIFIKASIE VAN NAVORSERS**

Indien u of u kind enige vrae of besorgdheid omtrent die navorsing het, staan dit u vry om in verbinding te tree met Minna Steyn (navorsers) of Dr Frenette Southwood (studieleier).

Minna Steyn  
[sasminna@gmail.com](mailto:sasminna@gmail.com)  
081 336 0958

Frenette Southwood  
[fs@sun.ac.za](mailto:fs@sun.ac.za)  
021 808 2010

## 9. REGTE VAN PROEFPERSONE

U kan in enige stadium tydens die verloop van die studie u inwilliging terugtrek en u deelname beëindig, sonder enige nadelige gevolge vir u of u kind. Deur deel te neem aan die navorsingstudie, doen u geensins afstand van enige wetlike regte, eise of regsmiddele nie. Indien u vrae het oor u regte as proefpersoon, skakel gerus met Me Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] van die Afdeling Navorsingsontwikkeling

### VERKLARING DEUR PROEFPERSOON OF SY/HAAR REGSVERTREENWOORDIGER

Die bostaande inligting is aan my gegee en verduidelik deur Minna Steyn in die taal van my keuse (Afrikaans /Engels/Suid Afrikaanse Gebaretaal), ek is dié taal magtig of dit is bevredigend vir my vertaal. Ek is die geleentheid gebied om vrae te stel en my vrae is tot my bevrediging beantwoord.

Ek willig hiermee vrywillig in dat my kind deelneem aan die studie. Beeldmateriaal waarop my kind verskyn, mag in die volgende vorme verskyn:

- geen beeldmateriaal
- foto's en video-opnames
- foto's maar nie video-opnames nie
- video-opnames maar nie foto's nie
- geen foto's of video-opnames nie maar wel lyntekeninge wat op foto's gebaseer is

My kind se gesig mag / mag nie vertoon word nie (selekteer asseblief die toepaslike opsie). Waar die gesig nie vertoon mag word nie, sal 'n swart blok oor die kind se hele gesig geplaas word (van die mond tot die wekbroue an van oor toto oor), ongeag die aard van die beeldmateriaal.

'n Afskrif van hierdie vorm is aan my gegee.

\_\_\_\_\_  
Naam van deelnemer

\_\_\_\_\_  
Naam van ouer

\_\_\_\_\_  
Handtekening van ouer

\_\_\_\_\_  
Datum

### VERKLARING DEUR ONDERSOEKER

Ek verklaar dat ek die inligting in hierdie dokument vervat verduidelik het aan \_\_\_\_\_ [naam van die ouer]. Hy/sy is aangemoedig en oorgenoeg tyd gegee om vrae aan my te stel. Dié gesprek is in [Afrikaans / Engels/ Suid Afrikaanse Gebaretaal] gevoer.

\_\_\_\_\_  
Handtekening van ondersoeker

\_\_\_\_\_  
Datum

## Appendix B

### Data base custodian consent form



# De la Bat

DE LA BAT-SKOOI, POSBUS 98, WORCESTER 6849 TELEFOON (023) 342 2560  
DE LA BAT SCHOOL, PO BOX 98, WORCESTER 6849 TELEPHONE (023) 342 2560  
FAKS NR./FAX NO. (023) 342 5563  
HOOF/PRINCIPAL: MNR/MR P.A. COOK  
E-pos: [hoof@delabat.wcape.school.za](mailto:hoof@delabat.wcape.school.za)  
ALLE KORRESPONDENSIE MOET GERIG WORD AAN DIE HOOF  
ALL COMMUNICATIONS TO BE ADDRESSED TO THE PRINCIPAL

#### VIR WIE DIT MAG AANGAAN

Hiermee verleen ek aan Minna Steyn toegang tot die volgende gegewens om dit vir haar MA-studie getiteld "Investigating the course of L1 SASL development and L2 Afrikaans reading development in young deaf children following a newly introduced curriculum with SASL as both LoLT and school subject" te gebruik:

- Die databasis met video-opnames wat van leerders gemaak is vanaf 2011 tot 2013 tydens die SAGT-kurrikulumloodsprojek.
- Die skoolrekords van tot vyf leerders wat sy as gevallestudies in haar studie wil betrek
- Die persoonlike inligting wat De la Bat-skool het oor bogenoemde leerders.

Ek verleen ook aan Minna Steyn toestemming om gesprekke met die onderwyseresse van bogenoemde leerders te voer om uit te vind hoe die leerders tans in terme van geletterdheid vaar.

Die uwe



P.A. Cook

SKOOLHOOF & ARGIEFBESTUURDER: SAGT-KURRIKULUMLOODSPROJEK

## Appendix C

### Permission letter from the Western Cape Education Department

[Audrey.wyngaard@westerncape.gov.za](mailto:Audrey.wyngaard@westerncape.gov.za)

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

**REFERENCE:** 20150513-47793

**ENQUIRIES:** Dr A T Wyngaard

Mrs Minna Steyn  
20 Eagle Crescent  
Bizweni  
Somerset West  
7130

**Dear Mrs Minna Steyn**

**RESEARCH PROPOSAL: INVESTIGATING THE COURSE OF FIRST LANGUAGE SASL DEVELOPMENT AND SECOND LANGUAGE AFRIKAANS READING DEVELOPMENT IN YOUNG DEAF CHILDREN FOLLOWING A NEWLY INTRODUCED CURRICULUM WITH SASL AS BOTH LOLT AND SCHOOL SUBJECT**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **14 May 2015 till 30 September 2015**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services  
Western Cape Education Department  
Private Bag X9114  
CAPE TOWN  
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

**Directorate: Research**

**DATE: 13 May 2015**

## Appendix D

### Clearance letter from the Research Ethics Committee



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#### Approval Notice Stipulated documents/requirements

15-Sep-2015  
Steyn, Minna MA

Proposal #: HS1194/2015

Title: Investigating the course of first language South African Sign Language development and second language Afrikaans reading development in young deaf children following a newly introduced curriculum with South African Sign Language as both Language of Learning and Teaching and school subject.

Dear Mrs Minna Steyn,

Your Stipulated documents/requirements received on 02-Jul-2015, was reviewed by members of the Research Ethics Committee: Human Research (Humanities) via Expedited review procedures on 15-Sep-2015 and was approved.

Sincerely,

Clarissa Graham  
REC Coordinator  
Research Ethics Committee: Human Research (Humanities)