THE IMPLEMENTATION OF A BILINGUAL-BICULTURAL LITERACY INTERVENTION PROGRAMME FOR DEAF LEARNERS IN NAMIBIA

BY

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DECLARATION

I, Beausetha Juhetha Bruwer, the undersigned, herewith declare that this thesis titled, *The Implementation of a Bilingual-Bicultural Literacy Intervention Programme for Deaf Learners in Namibia*, is my own original work that was produced through the guidance of my study promoters. It is my declaration that the work is being submitted for the first time at the University of the Free State as a degree in a PhD in the Faculty of the Humanities. It has never been submitted to any other university for the purpose of obtaining a degree.

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ABSTRACT

The Bilingual-Bicultural approach is considered the best approach to teach deaf learners. This approach also provides the best opportunity for deaf learners to become biliterate. Namibia too has adopted the Bilingual-Bicultural approach to teaching deaf learners and are a signatory to national and international policies and laws to ensure deaf learners are provided with the best opportunity for an education. Contrary to the adoption of the Bilingual-Bicultural approach, policies and laws, no impact has been seen on an improvement in the deaf learners' academic performance. Deaf learners still leave school with low literacy levels and unsure of their future.

The main purpose of this study was to find the best instructional practices to teach deaf learners through the Bilingual-Bicultural approach. This was done through the implementation of an intervention programme that can narrow the delay and gap in language learning and literacy. The study adopted a programme evaluation within a multi-method research design. The research objectives accommodated the implementation of a Bilingual-Bicultural literacy intervention programme for deaf learners. The data for the study consisted of quantitative data in the form of measurements based on diagnostic tests and qualitative data in the form of document analysis, participant and non-participant observations as well as unstructured interviews. The variety of data directed the study to a multi-data analysis.

The themes that were established for feedback of the research findings originated from the research objectives and the programme evaluation questions that were drawn up to guide the evaluation of the Bilingual-Bicultural literacy programme. The emphasis of the intervention programme was to draw up new and adopted Integrated Planning Manuals that are based on the NSL and Written English syllabuses and prescribed language skills of both language subjects. From the new IPMs, lessons were designed for both language subjects. Teaching and learning materials were also designed to support the lessons. The programme envisaged a systematic method of learning the deaf learners the two languages at the same time. The aim was to teach Written English based on NSL. The programme had a dual integrated approach in that it integrated into specific themes and topics for a week and the language skills for each language subject. It also integrates into the other subjects that are taught to the learners. The programme was systematic in teaching learners in small

portions, every time building on these small portions. Teachers were provided with deliberate training on the instructional practices that were intended for the programme.

The implementation of the Bilingual-Bicultural literacy programme resulted in a positive impact and improvement on the biliteracy of the deaf learners. Statistical analyses underscored the value of the intervention program. *T*-tests yielded statistical significant results for both NSL and Written English skills with regard to the total scores as well as the sub-tests included in this study ($p<0.05$). The teachers who participated in the study showed significant teacher attributes in the form of self-efficacy, the ability to communicate in NSL, experience and skills to teach deaf learners and good teacher-learner relationships. Even though, through the programme, the teachers gained pedagogical knowledge and understanding to applicable instructional practices that can be implemented in their teaching, they lacked support systems to sustain their instruction. Continuous interaction and support are thus recommended at all levels to sustain the further development of the Bilingual-Bicultural literacy programme.

Key words:

Bilingual-Bicultural; biliteracy; Bilingual Education; bimodal; Translanguaging; Deaf Education; junior primary; Namibian Sign Language (NSL); Written English; [1]deaf learner; Deaf adults; Deaf Culture; school for deaf learners

[1] For this study **deaf** in deaf learners will refer to audiological deafness and will be written with a small letter 'd'. **Deaf** for Deaf adults will refer to culturally deafness in the instances where the adults embrace Deaf Culture. In this case, it will be written with a capital letter 'D'.

CHAPTER 1: INTRODUCTION

1.1 Introduction

Within the Namibian framework, numerous documents support education-for-all, including education for deaf learners. According to Bruwer and February (2019:35), the Namibian government committed itself, on a national and international level, to leave no child behind. National standards, policies and laws that prohibit any form of discrimination and segregation are thus in place and this includes the mandate to serve all learners. On an international level, the government of Namibia committed itself by being a signatory to various agreements in the initiation of an inclusive education system. According to the Ministry of Education (2014a:5), the UN Convention on the Rights of the Child (1989), the Jomtien World Declaration on Education for All (1990), the Standard Rules on the Equalisation of Opportunities for Persons with Disabilities (1993), the Salamanca Statement and Framework for Action (1994), the Dakar Framework for Action (2000), and the UN Convention on the Rights of Persons with Disabilities (2006) are among these agreements.

Nationally Namibia has policies and laws to protect and serve all its citizens. One such policy is the Sector Policy on Inclusive Education that was approved by Namibia's Cabinet in 2013:

> *The Sector Policy on Inclusive Education is a medium of attaining accessible, equitable and sound education for all through efficiency, democracy and solid advocacy for lifelong learning.* (Ministry of Education, 2013)

Grounded in the Sector Policy on Inclusive Education, a Curriculum Framework for Inclusive Education was drawn up. However, this document is still in draft form. The goal of this second document is to integrate and align Inclusive Education principles with the National Curriculum for Basic Education, maintaining consistency in the attainment and sustainability of the Sector Policy of Inclusive Education's goals and objectives and making the curriculum more receptive to all learners with special educational requirements (Ministry of Education, 2014a:4).

Based on the Draft Curriculum Framework for Inclusive Education, learning through the medium of the mother tongue is essential. In the Junior Primary phase (Pre-primary to Grade 3) the language of instruction and learning is thus the mother tongue. For deaf learners, their mother tongue or first language is Namibian Sign Language (NSL), which is reflected to be the language

that identifies the Deaf community and transmits Deaf culture. NSL is therefore the language of instruction for deaf learners from Junior Primary to Senior Secondary and beyond, and Written English is used for reading and writing (Bruwer & February, 2019:37). NSL and Written English are hence taught as school subjects and are guided by the appropriate syllabi.

Despite all that has been done, according to the *New Era Newspaper* (2016), the deaf child still feels discriminated against and unsure of their futures. *New Era Newspaper* (2016) states that after years of independence, there is very little to be proud of in Deaf Education as deaf learners still fail their Junior Secondary phase and are not able to continue with their Senior Secondary phase or find a job after that.

1.2 Background to the study

Mahshie (1995:xiv) states that although Deaf people can become proficient readers and writers, educators of deaf learners experience challenges in finding an appropriate approach to obtain the desired results. This challenge is even greater in countries like South Africa, as teachers are not required to have any formal training in Deaf Education, resulting in a lack of pedagogical knowledge in teaching literacy to deaf learners (Van Staden, 2013:306). Qi and Mitchell (2012:14) have summarised deaf and hard-of-hearing learners' achievements over the past three decades as measured by the Stanford Achievement Test. They have found that scores did not improve, despite substantial changes in Deaf Education. Deaf learners are still performing lower than their hearing peers do. According to The Deaf Federation of South Africa, the written language comprehension ability of the average deaf school leaver in South Africa is equal to that of an eight-year-old hearing child (Glaser & Van Pletzen, 2012:26).

Svartholm (2014) did a search in earlier educational outcomes that are considered successful in the history of Swedish Deaf Education. He found that in 1809, when the Manilla School for the Deaf was founded in Stockholm, Swedish Sign Language was used as a medium of instruction. The basis for the success in Deaf Education during this period was the recognition of the need for Sign Language in the lives of Deaf people, together with faith in the abilities of the Deaf (Svartholm, 2014).

The Bilingual-Bicultural method to communication and education is the most recent strategy to obtaining favour in Deaf Education (Ross & Deverell, 2010:285). This approach proposes that deaf learners be taught natural Sign Language as a first language, and then a second language, such as English, after that. The Swedish Parliament passed a regulation in the 1980s requiring Deaf persons to be bilingual in order to operate well in the family, school, and society (Mahshie, 1995:xiii). According to Knoors, Tang and Marschark (2014:1), other countries soon followed Sweden in providing Bilingual Education as the main option in schools for deaf learners. The Deaf Federation of South Africa started to promote the Bilingual-Bicultural approach from the 1990s (Van Staden, Badenhorst & Ridge, 2009:52). Focusing on the educational context of deaf learners in Namibia, a study by Bruwer (2013) confirms that the Namibian Department of Education has also adopted the Bilingual-Bicultural approach in the teaching of deaf learners.

In the study done by Bruwer (2013), a logic model was drawn based on sociolinguistic and socio-educational principles to evaluate the efficiency of Bilingual and Biliterate Education at a school for deaf learners. From these principles, factors were identified that played a role in the implementation of a Bilingual-Bicultural programme. From the factors that were identified the most crucial factors were teacher qualification, effective assessment, parental support and involvement. The researcher believes that by closely studying the objectives of the logic model and by adapting and adopting it to bilingual teaching, better literacy skills can be obtained in deaf learners. Against this background, the researcher developed an intervention programme that focused on working with junior primary deaf learners and their teachers to bring about better biliteracy skills for deaf learners in Namibia. This research formed part of a broader literacy project funded by the National Research Foundation of South Africa, entitled: Cognitive Linguistic Processing of L1 and L2 Learners with Typical and Atypical Patterns of Development (Grant Number: 87728).

1.3 An overview of Deaf Education in Namibia

"The situation and level of teaching for the hearing impaired in Namibia has been rated as similar to the situation in Iceland in the 1970s." (Wiium, 2007:5) While many people view the 1980 - 1990s as the golden years of Deaf Education, it was merely the start of identifying the need for Deaf Education in Namibia. Abroad a lot of linguistic and psychological research into Sign

Language structure, Sign Language acquisition and Sign Language processing in the brain was conducted (Knoors et al., 2014:3). Sign Language was getting recognition in western countries, causing sociolinguists and anthropologists to make full use of the opportunity to research a new language and a new culture, involving Deaf scholars and researchers in this new development (Humphrey & Alcorn, 2007:131).

According to Ashipale, Daniel, Haikale, Isreal, Linus, Henock and Morgan (1994:343) as well as Nambira (2007:10), the idea to establish an education system for the Deaf in Namibia was only debated during the late 1960s. Finnish missionaries, together with the Evangelical Lutheran Church, established the Engela Training Centre in northern Namibia, where two teachers from the centre were sent to Pretoria in South Africa for training (Nambira, 2007:10). The sign system used in South Africa in certain schools for deaf learners at the time, was the Paget Gorman Sign System (Ashipale et al., 1994:343), which is a system that was invented in England to teach English supported by signs to deaf learners (Bruwer & February, 2019:37). The teachers who were trained in Pretoria taught the deaf learners at Engela using the Paget Gorman Sign System with an Oshiwambo (a Namibian language) word order. The Centre offered facilities for parents and deaf learners to spend time together to learn and understand one another's communication needs. The Centre also offered basic Sign Language classes, literacy and numeracy classes as well as vocational training to the older deaf learners (Nambira, 2007:10).

The first school for deaf learners that was established in 1975 was the Eluwa Special School. It was established under the South African Department of Education and Training and it was administered directly from Pretoria. Twelve children under the age of 17, with their teachers, were moved from the Engela Training Centre to the Eluwa Special School that catered for learners who were deaf and/or blind (Ashipale et al., 1994:343). Under the South African Department of Education and Training, the Eluwa Special School did not receive suitable attention and thus maintained a poor quality of education. The situation started to improve after Namibia had become independent from South Africa in 1990 (Nambira, 2007:10). By this time, Namibia was already decades behind the new development in Deaf Education.

In 1989, a group of parents and some specialists in the field established the Association for Children with Language, Speech and Hearing Impairments of Namibia, known as CLaSH. The reason for this was to accommodate very young learners, especially those who were prelingually

deaf. CLaSH was registered as a welfare organisation with the Ministry of Health and Social Services and has since grown from an innovative parents' group to a well-known non-governmental service provider. The objectives of CLaSH are the early identification, early intervention and early education of children with hearing loss. In 1994 the CLaSH association established the only specialised pre-school unit for deaf learners in Namibia that accommodates up to ten deaf learners a year (Bruwer & February, 2019:39).

In the capital city, Windhoek, a second school for deaf learners opened in 1995. In 2005, a third deaf school opened in Eenhana, in the northern part of the country. These schools exclusively cater for learners from Pre-primary to Grade 10. According to the researcher, it was only from 2007 that learners who had passed Grade 10 could attend Grade 11 and Grade 12 at selected inclusive schools. At these inclusive schools they are taught their lessons through interpreters (Bruwer & February, 2019:38). In order to accommodate more learners who are deaf, a unit for deaf learners in Katima Mulilo was established by a VSO (Volunteer Services Overseas) volunteer in 1996. In 2007, another unit for deaf learners was opened in Rundu. These units do not function as inclusive education classrooms, but special classrooms, in a mainstream school, for learners who are deaf (Bruwer & February, 2019:38). No formal education provision is currently provided for learners who are deaf who reside in the south of the country. Parents of these learners will often choose to send their children to South Africa for schooling. In the past, these learners could get financial support from the government to go to South Africa for education. Currently this has become financially impossible and parents are advised to send their children to the school for deaf learners in Windhoek (Bruwer & February, 2019:39).

Looking at the map of Namibia it is obvious that most schools and units for deaf learners are situated in the north of the country, with one school and the preschool (CLaSH) situated in the capital, Windhoek. According to Ellis (2011:6), it seems that Deaf people are evenly distributed throughout the population; however, more Deaf people are situated in the northern regions of the country. Ellis (2011:6) is of the opinion that the reason can be that malaria and meningitis are more customary in these regions.

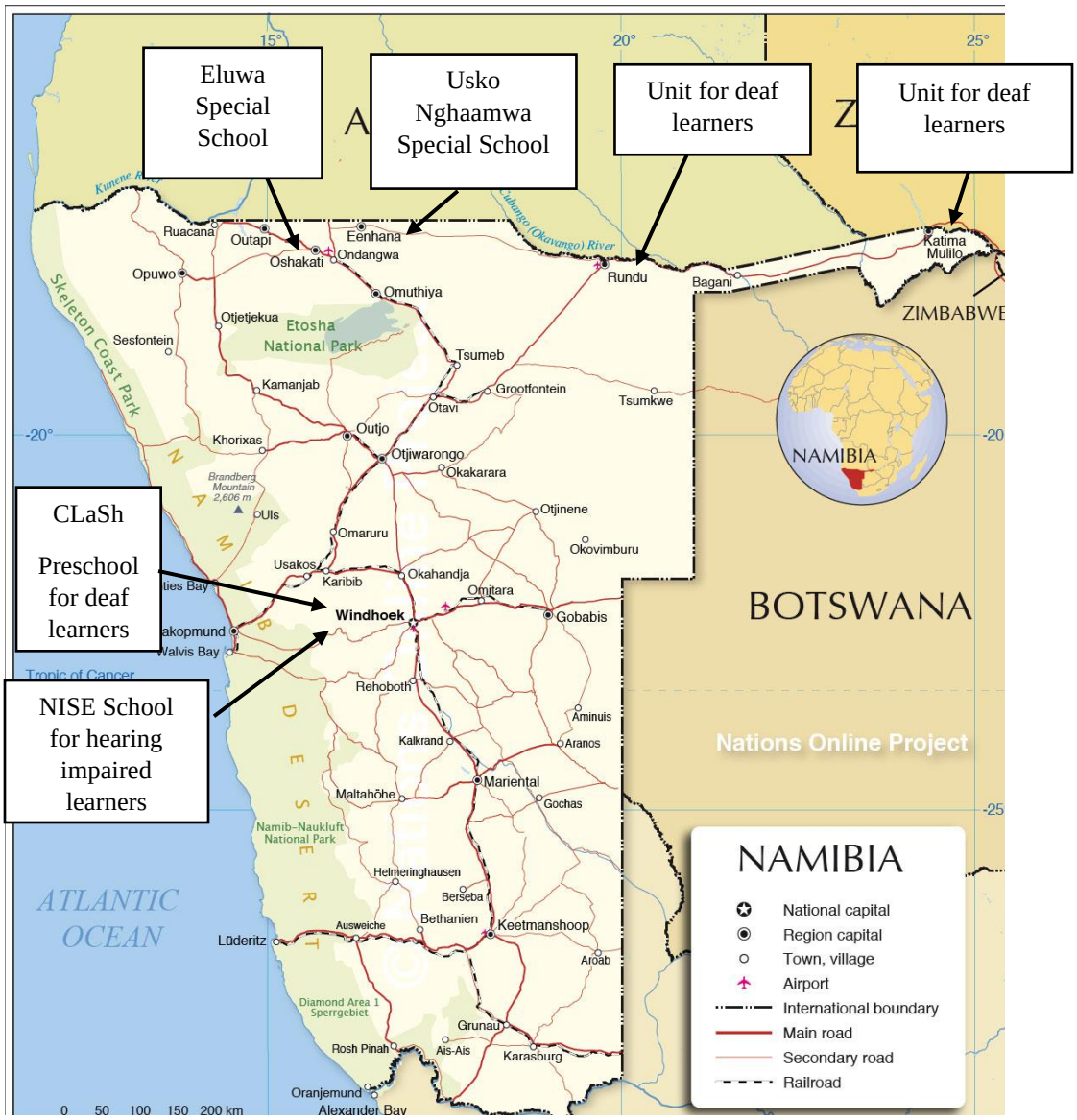


Figure 1.1: Map of Namibia indicating schools and units that cater for deaf learners in Namibia *(https://tlarremore.wordpress.com/2017/09/21/mispronouncing-namibia-a-country-in-southern-africa-is-a-sin-or-something)*

Bruwer and February (2019:42) believe that Deaf Education in Namibia got an enormous boost in 2006 when the Icelandic International Development Agency (ICEIDA) began its work with the Deaf. ICEIDA, together with the Ministry of Education, held a conference on Deaf Education in 2007 under the theme, 'Applying the Bilingual-Bicultural Education Approach: Building Bridges in Education'. In response to the resolutions taken during this first conference on Deaf Education, a second collaborative conference between the Ministry of Education and ICEIDA was held in 2010. The second conference focused on four specific themes in Deaf Education, namely adult

literacy, higher education, vocational training, and employability. The main purpose of the conference was to explore education and employment opportunities for adults who were deaf. ICEIDA then signed a bilateral agreement with the Ministry of Education (Ellis, 2011:6). The project's main goal was to empower Deaf people by increasing their competence in Deaf Education and developing Namibian Sign Language (NSL). With this collaboration, a project document was implemented in 2007, called 'Signs Speak as Loud as Words'. The project document explains the severe marginalisation of deaf people in Namibia; it notes that at the time only 300 deaf children were at schools and units; that NSL was not in a good position; that establishments for the Deaf had limited resources; a negative attitude that was displayed towards the Deaf, and that commitments from government in policies and laws were not implemented effectively (Bruwer & February, 2019:44). The objective for development was thus to improve educational facilities for young deaf learners and to enable the Deaf in Namibia through inclusion in mainstream society.

The Ministry of Education assumed the Bilingual-Bicultural method of teaching deaf learners (Bruwer, 2013:84); however, with no academic progress amongst deaf learners. A study by Bruwer (2013) attempted to determine the effectiveness of Bilingual and Biliterate Education from a sociolinguistic and socio-educational perspective. This study was done as part of qualitative research for a master's thesis. The study was designed as a programme evaluation, with the goal of determining the effectiveness of Bilingual and Biliterate Education for deaf learners in Namibia. After a logic model tool had been designed for the evaluation, data were collected through interviews, observations, and document analysis. From this evaluation study, the following factors were identified that constitute the success of a Bilingual and Biliterate Education programme (Bruwer & February, 2019:47):

- The individual roles of NSL and English at school,
- Teacher qualification,
- Teacher fluency in Namibian Sign Language,
- Parental involvement in school programmes and support provided to parents of learners who are deaf,
- Policies, documentation and prescribed procedures,

- Sign bilingual environment at school,
- Involvement of the Deaf community,
- Available instructional material, and
- Assessment tools used to assess learners who are deaf.

Diversity among deaf learners, however, indicates that many other factors also play a role in a successful Bilingual and Biliterate Education programme. Some researchers mention the importance of parental involvement and language ability, the cognitive functioning of the learners as well as the child's social-emotional functioning, parental choices about language and age of exposure to a fully accessible first language for the deaf child, early intervention and the availability of Sign Bilingual programmes, learners with additional disabilities, and effective instruction as well as economic and social challenges (Marschark & Lee, 2014:217; Plaza-Pust, 2014:24-34; Knoors et al., 2014:4; Hermans et al., 2014:273). This makes it difficult to prescribe one particular method of teaching. Other studies indicate that with the growth in technological advances such as hearing screening, hearing aid advancements and cochlear implants, more deaf learners will be able to acquire spoken languages. The question that is raised is what the role of Sign Language and Bilingual Education will be for these learners (Knoors & Marschark, 2012:298; Swanwick et al., 2014:296; Marschark & Lee, 2014:221; Walker & Tomblin, 2014:134).

While Namibia is still in the process of figuring out a method for Sign Bilingualism in education, technological advancements in other countries are evolving Deaf Education. Early identification and early intervention of hearing loss continue to be a challenge. According to Bruwer and February (2019:40), no prenatal or new-born screening is administered at state health institutions to examine the hearing ability of babies. Only one state hospital in Windhoek (the capital of Namibia) does auditory brainstem response tests and such a test can only be done upon the availability of an audiologist. In the past, high-frequency rattles were donated to various hospitals in Namibia to do testing on babies, but these have not been maintained well and are no longer readily available. Today this method of testing has been abandoned. It is almost impossible to get a formal diagnosis of hearing loss, especially for people living in rural areas. Only a few fortunate children get a formal diagnosis before going to school. According to Bruwer and February (2019:40), there is also no support structure in place to provide support, advice and guidance after

formal identification of hearing loss has taken place. No support is also offered to parents as to how they can assist their deaf child to learn. Parents with a good medical aid can apply for their child to have a cochlear implant, should they wish for this. However, no rehabilitation system is in place for children who receive a cochlear implant. This results in these children not fully enjoying the benefits of their hearing aids and soon they opt not to wear it anymore. There are only a few children in mainstream schools that benefit fully from their hearing aids and this is only made possible through outside support to them and their parents (Bruwer & February, 2019:40).

Technological advancements are thus not as innovative in Namibia as in other, more developed countries. Currently, the focus is not so much on the diversity among deaf learners with or without a hearing aid as it is on the individual diversities of deaf learners and the various factors that contribute to the success of learning within a Sign Bilingual programme. This makes following a single method of teaching all deaf learners a challenge. In the process of going through the growing pains of Deaf Education, Namibia followed the world in adopting the Bilingual-Bicultural approach to teaching deaf learners. The problem now is to find the best instructional practice to teach this approach while also meeting the needs of all deaf learners. This problem was the motivation behind this current study.

1.4 Research problem

According to Stewart and Clarke (2003:4), Ortiz and Ordoñez-Jasis (2010:131), and Alvi and Hameed (2018:18), literacy is the skill to read and write, as well as the ability to comprehend and use written information in your ordinary daily activities at home and in your community. It also includes the ability to think and reason within a given society, as well as the ability to achieve one's goals and develop one's knowledge and potential through the advancement of language. Kuntze, Golos and Enns (2014:217) further add that to be literate, a person should be able to think critically about information and process information in such a manner to be able to communicate with an audience, regardless of the language or modality. A major concern in Namibia is the poor academic performance and low literacy level of deaf learners and the need to understand the reason for this scenario (Mbumba, 2007:6; Bruwer & February, 2019:43). Even though many countries, including South Africa and Namibia, have adopted the Bilingual-Bicultural approach that should result in biliteracy for deaf learners, deaf learners still perform poorly. The Bilingual-Bicultural

approach is considered the best approach to teach deaf learners; yet there is a continuous lack of academic performance amongst deaf learners, as studies indicate that deaf learners are still performing lower than their hearing peers do (Qi & Mitchell, 2012:14; Knoors & Marschark, 2012:14; Hrastinski & Wibur, 2016:156; Mayer & Trezek, 2019:8). The theoretical foundation of the Bilingual Deaf Education approach based on Cummin's (1981) linguistic interdependence hypothesis, which argues that first-language competency is essential in order to develop a second language, is now questioned, as what was projected are not happening in schools for deaf learners. Even though Deaf people can become proficient readers and writers, the challenge remains in finding an appropriate instructional approach to obtain the desired results (Mahshie, 1995:xiii). Schirmer and Williams (2003:110) state that pre-literacy starts at home and later advances in school. This is an even bigger challenge as deaf learners not only differ from their hearing peers, but also vary greatly among themselves regarding their various family and social backgrounds as well as language use, and overall, their holistic development (also see Howerton-Fox & Falk, 2019:2; Ntinda, Thwala & Tfusi, 2019:79).

The study will be guided by the following research questions:

- What is the language ability of junior primary learners at the school?
- How can biliteracy skills in deaf learners improve after the application of an intervention programme?
- How can deaf learners be supported by teachers and parents to become biliterate?
- What challenges does the school experience in the implementation of a biliteracy programme?

1.5 Purpose, aims and objectives

The assertion on which the bilingual model for deaf learners was based, believed that if a child's natural Sign Language was completely developed and employed as the primary language of education, literacy in a second language (spoken language) would develop as well (Mayer & Leigh, 2010:176). Concerns are now raised, because what the bilingual model was based on does not happen at schools for the deaf. However, for this research, the researcher did not condemn the

model, but used it as the aim of this study, namely to find the best applicability of the bilingual model at a school for the deaf in Namibia. The objectives were:

- To determine the language ability of deaf learners.
- To determine how biliteracy skills in deaf learners can improve after the application of an intervention programme.
- To explore the roles of teachers and parents in the support of biliteracy for deaf learners.
- To explore challenges faced in implementing a biliteracy programme at a school for deaf learners.

1.6 Theoretical framework

This study is grounded in the work of two prominent theorists who have strived to explain the nature of social learning. The researcher will begin with the work of Bandura's (1977) social cognitive learning theory and then link it with views of Bronfenbrenner's (1979) bio-ecological systems theory. The attempt is to obtain a better comprehension in respect of the role of a child's home and school environment on his or her learning and literacy development.

1.6.1 Bandura's theory

It is argued that social cognitive theory has its roots in behaviourism; however, over the past decades, cognitive processes have increasingly been assimilated into its explanation of learning (Ormrod, 2006:329). Bandura believes that social variables play a significant role in a child's learning and development (Gray & MacBlain, 2012:91). Imitation and identification are two such factors that are considered as important in social learning in that both factors provide for accelerated social learning in children (Gray & MacBlain, 2012:95). Children copy the performance of others and then they integrate new learning into existing perceptions that have already been adopted by them. Identification occurs when a child internalises entire patterns of behaviour, acting in new situations as they believe the adult after whom they model their behaviour would act. According to Salkind (2004:213), learning is thus not only a simple process in which the child observes an adult and then imitate the behaviour, but rather a complex series of steps in which the child approximates the model's behaviour through the internalisation of what the adult

signifies and then followed by the child's attempts to match that significance. This means that children could observe others and learn through their observation without their observation essentially leading to change in their behaviour. Motivation, according to Bandura, is a key factor in the link between children's observation and later changes in their behaviour. Motivation, he believed, is an important role in the growth and learning of young children (Gray & MacBlain, 2012:91). The word "observational learning" thus refers to social learning. This is where you can learn through watching other people who function as role models (Bandura, 1977). Bandura further points out that for effective and meaningful learning to occur, the adults (models) being imitated must behave appropriately (Gray & MacBlain, 2012:94).

Parents, according to Salkind (2004:212), are the most influential role models in a child's life. As a result, they may be the child's best teachers. This is due to the regularity and intensity with which children and their parents communicate, as well as the great regard children have for their parents and their aspiration to be like them (Salkind, 2004:212). The researcher believes that for the deaf child, these adults (models) also involve their teachers, hostel matrons and adult members from the Deaf community, as they are the adults that the child interacts with the most, especially those children who reside in the hostel. Badura further proposed that children can learn through symbolic modelling. This is where the child engages in imitation and identification of fictional characters, such as storybook or fairy tale characters (Gray & MacBlain, 2012:95). According to the researcher, it can include Deaf role models that are signing Deaf literature, or Deaf characters in signed stories.

For a deaf child to acquire Sign Language and Written Language, he or she needs to be in an environment where these languages are modelled. According to the researcher, parents, teachers, hostel matrons and other Deaf individuals are the most suitable models to create such an environment. However, these individuals need to project the appropriate behaviour and knowledge towards deafness, Sign Language, Written English and Deaf Culture for learning of the two languages to take place for the deaf child. It is the researcher's opinion that deaf children learn best through what they see, which makes observational learning a good option for them to learn a language and become literate in that language. However, they depend heavily on their parents, teachers and hostel matrons to model the appropriate behaviour and knowledge for them to approximate what was modelled and match the relevance to the particular behaviour. Exposure to

Sign Language storytelling can also lead to deaf children learning through what they observe from the fake characters in the story. This can be a great help to the adults who are not deaf themselves and that might not feel as comfortable in the use of Sign Language. By incorporating Deaf characters in the story, the deaf children can associate themselves with the characters and be more motivated to imitate not only the behaviour that can be a reflection of Deaf culture, but also the Sign Language used by the Deaf characters.

Another important aspect of Bandura's theory, according to Gray and MacBlain (2012:96), is self-efficacy. Bandura defines self-efficacy as one's belief in one's ability to do well and achieve in given conditions, as well as one's ability to take control over one's own actions in order to succeed (Gray & MacBlain, 2012:96). Knowledge and understanding of self-efficacy are especially relevant to professionals working with young children in education. This component of Bandura's theory impacts how the goals are understood that individuals, be they children, parents, or professionals aim to achieve (Gray & MacBlain, 2012:96).

The researcher agrees that self-efficacy is an important aspect to understand when working with deaf children, in that adults in a deaf child's environment can affect the child's self-efficacy in the behaviour that they modelled towards deafness, Sign Language, Written English and Deaf Culture. If adults model behaviour of negativity and a lack of support towards any of these components, the deaf child will imitate this negativity, which can lead to poor self-efficacy. Children with low self-efficacy, according to Gray and MacBlain (2012:96), will show themselves in social circumstances as having low self-confidence. This may cause them to avoid tasks that are difficult for them. Instead, they will choose to focus on the negative and frame their thoughts in such a way that they convince themselves that they will be unable to achieve something.

Through personal experience, the researcher has observed that deaf children have very low self-confidence in their ability to understand Written English. This thus presents a challenge to the adults (models) in the environment of these children. These adults will have to present a positive attitude, not only towards the teaching of Namibian Sign Language and Written English, but also show that they believe in the deaf child's ability to learn these languages and become literate. The researcher has also observed that deaf children feel more confident in Sign Language and portray better usage of Sign Language than of Written English. Written English should thus be modelled in such a way so that the deaf child approximates the model's behaviour through the internalisation

of what the Written English signifies and then followed by his or her attempt to match that significance to the Sign Language components that they know. This is consistent with Bandura's belief that developing a strong sense of self-efficacy requires mastery through experiences (Gray & MacBlain, 2012:96). In observing adult (models) or fictional Deaf characters succeed, getting positive and affirming comments from others and understanding their own emotions and feelings, especially towards deafness, Sign Language, Written English and Deaf Culture, the deaf child can develop a strong sense of self-efficacy toward becoming literate.

The social cognitive theory, as previously stated, is a learning paradigm that assumes people learn through watching others. They are, nevertheless, active participants in their environments, rather than being shaped by it. These taught behaviours may have a significant role on their personality. While the environment in which people grow up has an influence on their behaviour, the individual self is equally significant. The following is an outline of reciprocal determinism in which behaviour, personal factors and the environment influence one another.

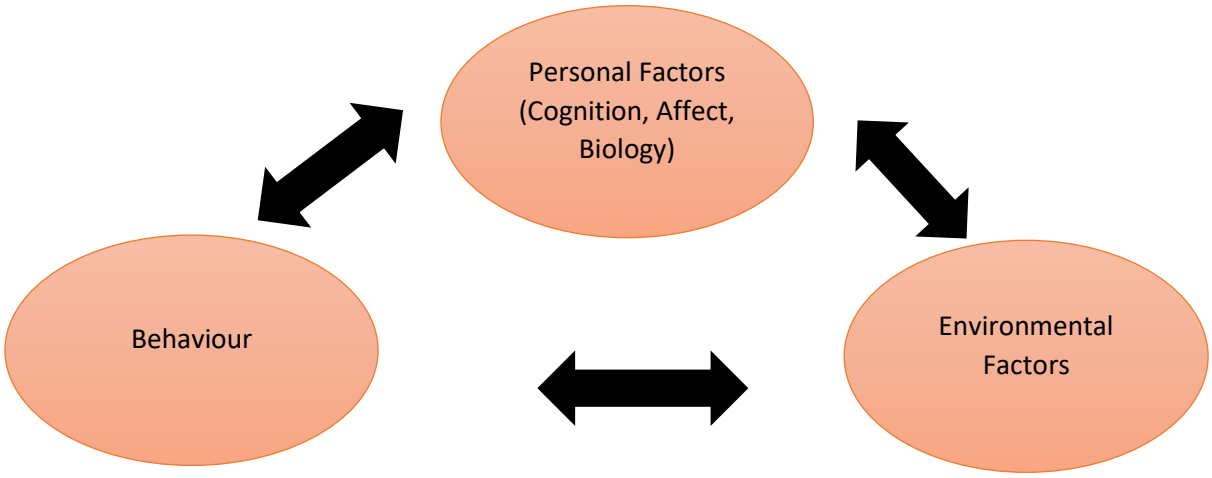


Figure 1.2: Outline of reciprocal determinism in which behaviour, personal factors and the environment influence each other *(Zhou & Brown, 2015:20)*

According to Zhou and Brown (2015:20), learning occurs in a social setting, with a dynamic and reciprocal connection between the individual, their surroundings, and their behaviour. Zhou and Brown (2015:21) further argue that an individual's level of self-efficacy towards a behaviour can influence their imitation of the observed behaviour, *the personal*. That is, getting the deaf child to trust in his or her capabilities to acceptably complete a behaviour, with the reaction they receive after they carry out a behaviour *the behavioural*. That is, the child should be able to experience

learning success as a result of appropriately performing the behaviour. Finally, components of the environment that affect an individual's capacity to accomplish a behaviour effectively, the environment; that is, establishing a conducive setting for better self-efficacy by providing appropriate support and tools (Zhou & Brown, 2015:21). The principle of social cognitive learning comprises learning and gaining knowledge by seeing models. Effective modelling is used to teach general norms and techniques to dealing with various scenarios. Regardless of the effects of models, the complete process of observational learning in a social learning setting might not be effective if the four processes of attention, retention, production, and motivation are not in place. (Zhou & Brown, 2015:23). The following is an outline of the interaction of these four operations.

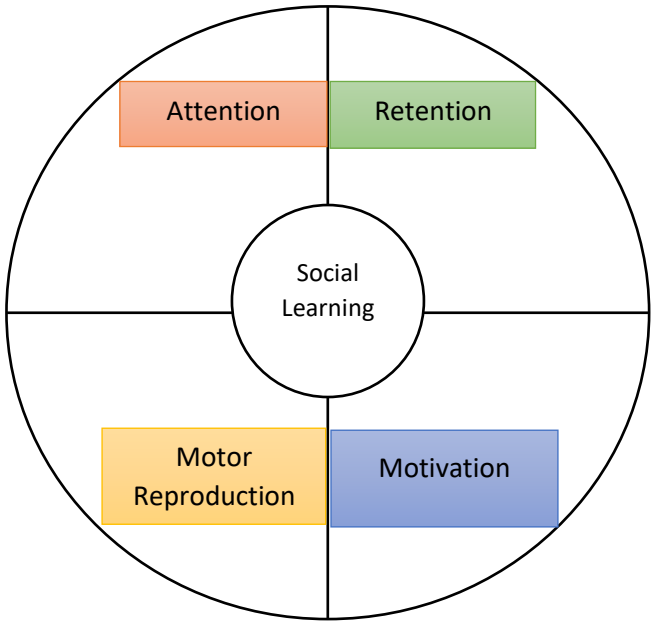


Figure 1.3: Interaction of the four operations necessary for social learning to take place
(Salkind, 2004:223)

Although it may appear obvious that observers must pay attention, Zhou and Brown (2015:23) think that observers selectively pay attention to specific social behaviour. This can be determined by the accessibility, relevance, complexity, and functional value of a certain social behaviour, as well as human characteristics such as cognitive ability, value preference, and preconceptions for some observers. The retention process will depend on the observer's memory for the modelled behaviour. Visual imagery and verbal coding assist with and are important for the memory processes. Visual imagery is especially important in early development when verbal skills are

limited. The production process refers to the symbolic demonstration of the original behaviour. This behaviour will be converted into action and it will be reproduced and demonstrated in a suitable context. During this process feedback is received from others and based on the feedback a person can adjust their demonstration for further references. Through the motivation process a behaviour can be recreated depending on the observer's reactions and consequences when re-enacting that behaviour (Zhou & Brown, 2015:23).

The researcher believes that these four components processes can be related to deaf children and how they might learn. It can also bring clarity to situations where learning in deaf children might not be perceived as expected. Questions that can then be asked is whether the behaviour or information that the child is exposed to is as accessible as it should be, if the retention of information is taking place as it should or if the child struggles with memory. If the child experiences difficulty in the first two components, the learning and literacy of two languages can be hampered which might lead to illiteracy in the deaf child.

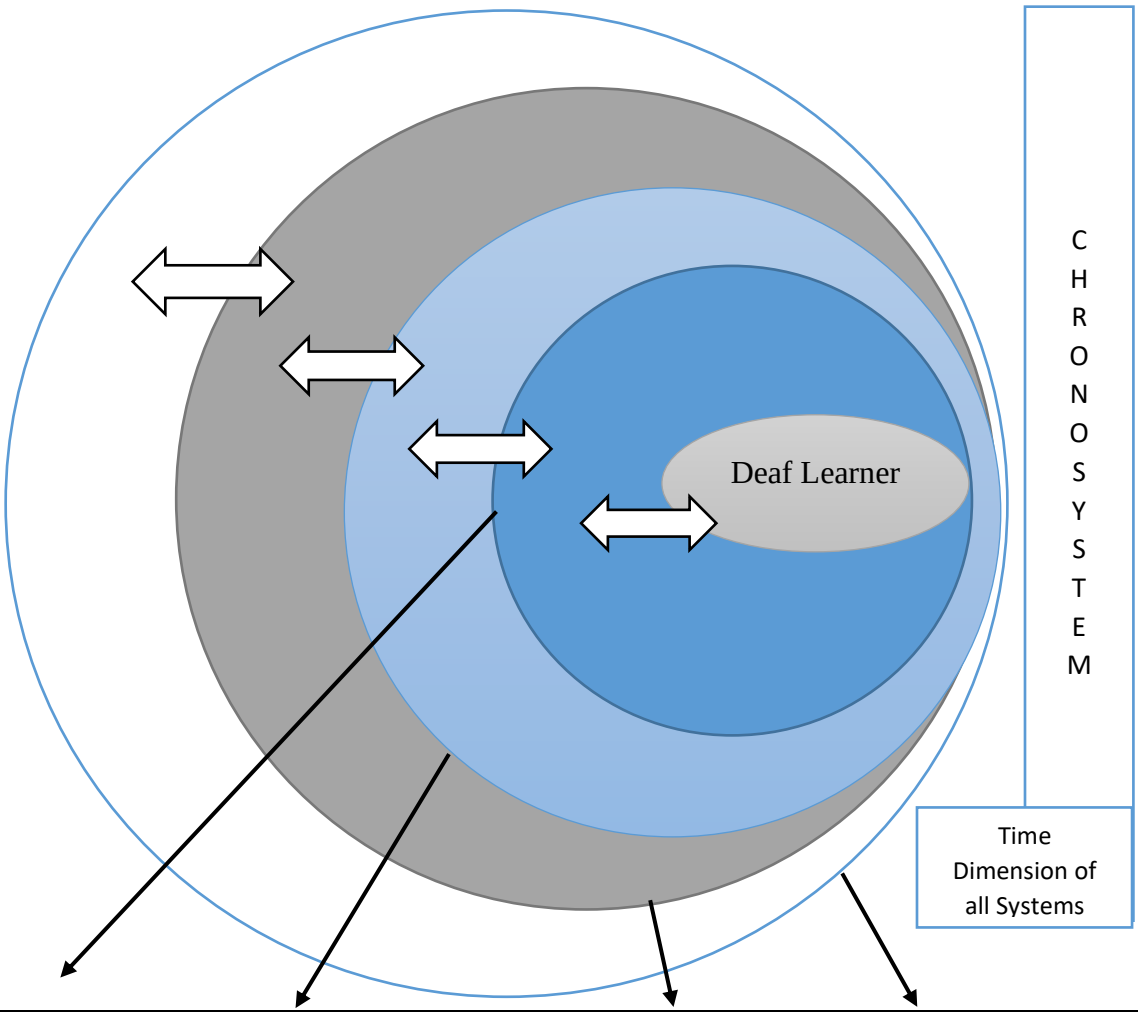
1.6.2 Bronfenbrenner's theory

To get an even better understanding of social learning, the researcher also studied Bronfenbrenner's theory. Bandura's approach, according to Gray and MacBlain (2012:97), is more focused on the individual. Bronfenbrenner, on the other hand, adds a layer of complexity by explaining how children acquire knowledge, as well as the cultural contexts and factors that can influence their development. Bronfenbrenner regarded the child's wider social, political, and economic surroundings as more fundamental than Bandura's work. Bronfenbrenner's theory can thus be best understood as the interplay of children with their surroundings (Gray & MacBlain, 2012:92).

Bronfenbrenner (1979) is a key proponent of the ecological system theory and criticises psychologists and educators who are purely concerned with individual growth and behaviour without respect for social, political, or economic factors in which a child grows up. Bronfenbrenner's theory is based on the idea that the bio-ecological system in which a child grows can be viewed of as a succession of layers that are constantly in contact with one another. All of the situations in which the child has direct personal experience, such as family, make up the most inner circle.

Ecological theory, according to Doherty and Hughes (2009:43), provides a comprehensive description of the impact of the environment on child development. The many situations in which children live and the manner in which they are raised are recognised as significant impacts on their development. From an ecological standpoint, interactions between systems at all levels are emphasised, and the environment in which the child interacts is given a high priority (Doherty & Hughes, 2009:43). Bronfenbrenner expanded ecological theory to include bio-ecological traits and qualities, confirming his long-held belief that biological properties and qualities are also important in explaining human development (Swart & Pettipher, 2016:12). According to Doherty and Hughes (2009:12), the 'bio'-aspect of the model identifies the person's biological self in the development process. The 'ecological' part identifies that the social context in which a person develops, are ecosystems because they are in continuous collaboration with one another and they influence one another. The ecological systems theory is a systemic organisation that helps to understand development by integrating broad sociocultural factors in children's lives, whereas the bio-ecological model puts the child at the centre and recognises biological makeup, cognitive capacities, and socio-emotional trails that influence and are influenced by the environment (Doherty & Hughes, 2009:12).

Bronfenbrenner believed that development should be researched in the family, school, and community where children reside (Doherty & Hughes, 2009:43). He claims that children are active participants in their development and that parents have a significant impact on their growth. He states that reciprocal interaction between children and parents should be considered, rather than considering maturation or parenting practices separately. Bee and Boyd (2010:338) state that for Bronfenbrenner, it is through the family that the larger society can influence a child's development. The family can allow the larger culture to reach the child, but it can also prohibit it. The world of children revolves around structures and each structure is linked to another. This organisation of structures is associated with the development of the four systems. The four interrelated systems in Bronfenbrenner's model are the microsystem, the mesosystem, the exosystem and the macrosystem and they all interact with the chronosystem (Swart & Pettipher, 2016:12). The following is an outline of such a bio-ecological model.



Microsystem	Mesosystem	Exosystem	Macrosystem
Proximal settings in which deaf learner is situated. - Home (parents) - School (teacher & peers)	Microsystem exists and interacts within the Mesosystem	No active participation from the deaf learner - Parents' employment - Family accommodation - Health services	- Socio-economic structure - Attitudes toward deafness - Beliefs about deafness - Values and ideologies

Figure 1.4: A bio-ecological model for a deaf child

1.6.2.1 The microsystem

The microsystem, according to Rosa and Tudge (2013:246), is the most proximate setting, with physical characteristics, in which a person is positioned. For a deaf child, this can include close family, friends, or teachers, as well as the actions of play and school activities. Swart and Pettipher

(2016:14) argue that it symbolises the setting in which children primarily learn about the world and that it is embodied by those closest to them. Within this system the relationships are reciprocal and there is a flow in both directions (Doherty & Hughes, 2009:15). This entails that each person reciprocally influences the other at a particular point in time. According to Swart and Pettipher (2016:14), the microsystem should successively serve as a protective feature to a child in supporting feelings of belonging, love and support. The opposite can, however, also be true in the cases where the environment is not as supportive. The researcher thinks that the microsystem is particularly important to the deaf child, as they are heavily dependent on the support of their parents, family, their teachers and their peers to feel accepted as a deaf person and supported in their language and literacy learning. Their parents will be the models to create a conducive environment for early language acquisition and provide positive motivation for learning. The microsystem can also become a risk factor in the cases where the deaf child will not be exposed to this positive home environment (Swart & Pettipher, 2016:14). In this case, language acquisition and literacy development, for the deaf child, can be influenced negatively.

1.6.2.2 The mesosystem

The mesosystem, according to Rosa and Tudge (2013:246), is the link between two or more microsystems in which the developing child is actively involved in. Microsystems exist and interact within a mesosystem. The mesosystem is thus a system of microsystems (Swart & Pettipher, 2016:15). All interactions are also reciprocal in this system, in that the teacher can influence the parents and the parents can affect the teacher, and these can in the end affect the child (Doherty & Hughes, 2009:15). The family, school, and peer group all interact with one another and adjust each of the systems. One microsystem within a mesosystem can be the relation between the teacher and the child in the classroom. According to the researcher, deaf learners, for example, that might come from home environments that are not conducive to Sign Language learning, that are not deaf-friendly or supportive towards the needs of a deaf person, are placed at risk for developing barriers to learning. Such a learner might have a teacher who will provide him or her with a Deaf environment where Sign Language is used for communication and provides emotional and learning support. This support can boost the deaf child's self-esteem and security. The school can become a protective resource for the child in that the positive experience that the child has at school through the language, learning and emotional support can shield the psychological effects

of the unsupportive environment at home (Swart & Pettipher, 2016:15). According to the researcher, the above can be true for many deaf learners with hearing parents who reside at the hostel, and do not have any real relationship with their parents and family members. The school and their friends (peers) can provide them with the needed support.

1.6.2.3 The exosystem

The exosystem, according to Rosa and Tudge (2013:246), is the third circle of the ecological model in which the developing child does not actively engage, but can experience its effect at times. The exosystem interacts with the mesosystem of interacting microsystems. Even though the child is not a direct part of the system, all of the social settings that affect the child are included under this layer. This can include a teacher's relationship with school administration, a parents' career, community services for health, employment, recreation, or the family's religious affiliation (Doherty & Hughes, 2009:15). The researcher is of the opinion that due to economic circumstances, many of the deaf learners in Namibia are placed in the hostel. The reasons might be to save on transport (taxi) money to school or because parents are working and residing outside the capital city, many times on farms or in small villages. Parents can thus not afford to move to the city to be close to their deaf child, or they do not have the financial capacity to pay for commuting by taxi. Months can pass by without any connection with the parents, which can influence the relationship between parent and child.

1.6.2.4 The macrosystem

The macrosystem is the larger society that "refers to dominant social and economic structures and the attitudes, beliefs, values, and ideologies inherent in the systems of a particular society and culture" (Swart & Pettipher, 2016:15). The macrosystem differs from the other levels of context in that it encompasses a culture's or subculture's institutional systems, such as economic, social, educational, legal, and political institutions (Rosa & Tudge, 2013:247). These systems aid in the investigation of several main forces that interact to generate the environment in which each child develops. They influence the character of all other levels' interactions, then supply the structure and substance of the inner systems and are explicit to a specific culture at a specific time. According to the researcher, for the deaf child this would mean that Namibian Sign Language, deafness, and Deaf Culture must first be embraced by the parents, family, school community and

the individual child before it can become part of the school culture, which falls within the macrosystem.

1.6.2.5 The chronosystem

According to Akyil, Prouty, Blanchard and Lyness (2014:45), the final system that Bronfenbrenner introduced was the chronosystem. This was done to examine how external (social) and internal (developmental) changes in the environment affect the person over time. According to Rosa and Tudge (2013:248), Bronfenbrenner emphasises that human development involves both continuity and growth. The individualities of a person vary over time and space. Swart and Pettipher (2016:16) believe that time plays an important role at three different levels: micro, meso, and macro. The chronosystem encapsulates the concept of time and how it relates to the interaction of different systems as well as their effects on individual development (Swart & Pettipher, 2016:16). Rosa and Tudge (2013:248) argue that this represents both continuity in the individual and change as a result of the dynamic relationships that exist between the person, the environment, and the other people in that context. All of these parts are involved in reciprocal processes that become increasingly sophisticated throughout time (Rosa & Tudge 2013:248). The child's growth will be more effective if relationships are developed in an ecological environment with people with whom the child has formed healthy emotional bonds with, that are mutual and enduring. The development of a child will be enhanced if the setting allows the child to see and participate in activities with the assistance of individuals who have a higher understanding and skill and if these individuals support the application of abilities learnt in other contexts and relationships (Rosa & Tudge 2013:248). According to the researcher, the implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia can come at a time where the in-efficacy of parents and teachers and the low self-confidence of the deaf child act as barriers to the education of the deaf child. The Bilingual-Bicultural literacy programme can create a positive environment that provides the deaf child with the opportunity to become literate with the assistance of parents, teachers, and school hostel matrons that have a better understanding and skills of deafness and Deaf Education.

The bio-ecological system revolves around the deaf child. The child does not live in a solitary environment; instead, he or she is a member of a family, which does not operate in isolation, but rather as part of a community. A deaf child's qualities interact with the environment's

characteristics to create a unique system that influences and is influenced by interaction in an ever-lengthening, hierarchically layered context in which the child is a member of a hierarchical whole, according to a bio-ecological perspective of development. Learning is a social activity; we learn from one another all the time. This links with Bandura's Social Cognitive Learning Theory, which argues that one acquires considerable information by just observing models. In this study, the emphasis will be on working with the multi-layered system of the bio-ecological theory in providing an exemplary model in social cognitive learning theory to bring about success in a Bilingual-Bicultural programme in Deaf Education.

1.7 Research design

A programme evaluation within a multi-method research design is used in this study. Johnson and Christensen (2014:54) believe that multi-method research is a strength in research, where quantitative and qualitative methods complement each other. In combining two methods with different strengths and weaknesses, it becomes less likely to miss important information. Creswell (2014a:215) argues that the blending of data provides a stronger understanding of the research phenomenon.

The principle objective of this study gives way for programme evaluation. Patton (2002:10) states that programme evaluation entails the collection of information regarding activities, characteristics, and outcomes of programme effectiveness in a systematic manner. The researcher is further guided by what Creswell (2014b:574) states as an embedded multi-method design to embed quantitative data within a qualitative study. The nature of the research problem, which entails the poor academic performance of deaf learners, required both an exploration and an understanding of the process of teaching and learning of deaf learners, thus making it an excellent qualitative study.

An experimental research design in the form of a one-group pre-test post-test design is used for the quantitative data collection. Special diagnostic measuring instruments were drawn up by the researcher for the NSL and Written English pre and post assessments. The same instruments were used for pre and post-tests. A case study research approach is used for the qualitative data collection. Data were collected in the form of document analysis of prescribed ministerial documents, participant and non-participant observation and unstructured interviews.

Stratified purposive sampling was done for the selection of the participants. Nieuwenhuis (2007:79) states that stratified purposive sampling involves selecting the participants of a research study based on a preselected criterion. The preselected criteria for the selection of the school were that the school should accommodate deaf learners and declare a Bilingual-Bicultural philosophy. The preselected criteria for the learners and teachers were that they should be part of the junior primary phase of the school. The school principal and head of department for the junior primary phase also formed part of the research participants. A full discussion on research methodology will follow in Chapter 4 of the research report.

1.8 Ethical considerations

As mentioned previously, this research forms part of an NRF-registered project entitled, "Cognitive linguistic processing and literacy development of L1 and L2 children with typical and atypical patterns of development". In this regard, ethical clearance to conduct this research has been obtained from the following relevant institutions: The Ethics Committee of the Faculty of Education (Ethical Clearance number: UFS-EDU-2013-0074) and the NRF (grant number: 87728). According to Ryen (2011:418), the three main ethical issues to be considered in a study of this nature are consent, confidentiality and trust. Thus, in addition to the above, ethical clearance was sought from the regional director and the principal of the sample school to do the research at the particular school. Written informed consent was also sought from the teachers, parents and/or guardians of the children who participated in the research. All participants were fully informed about the nature of the study and about their rights to withdraw from the study before the study commenced. The participants' anonymity is protected, and confidentiality is ensured by de-identifying all participants and by using pseudonyms. The researcher tried her best to earn the trust of the participants and to uphold it. All information gathered was treated as totally confidential and would be kept for at least three years. All records of collected data are kept in a safe and secure location at the University of Namibia.

1.9 Value of the research

This study contributes towards a better understanding of the psychology of educating deaf learners. The value of the research lies in the benefit it has for deaf learners in teaching them to be biliterate,

leading to the better academic performance of deaf learners. Barriers to the success of Bilingual-Bicultural programmes include the lack of supportive family resources and a lack of appropriate second language (English) pedagogy, as well as physical resources for teaching Sign Languages (Mayer & Leigh, 2010:178). The study produces an intervention programme that contributes to the elimination of these barriers. Parents are provided with support in the form of resources to work in collaboration with the teachers of their deaf children. In the process, a better understanding is reached on how to support deaf children's literacy development. Teachers gain pedagogical knowledge on teaching deaf learners to be biliterate.

1.10 Limitation of the study

An immense limitation to the study was to get parental involvement, the reason being that many of the learners stayed in the hostel, with their parents residing outside the city where the study was conducted. Guardians who were assigned to the learners by the parents did not avail themselves to show up for parent meetings or planned activities.

A second limitation was a lack of readily available teaching and learning materials, especially in the form of pre-recorded signed vocabulary or signed stories. A lot of time had to be spent on researching and recording Namibian signs. Within the Namibian context there are limited deaf literature that is pre-recorded. Literature from other countries like South Africa had to be used at times. Another limitation was the lack of readily available assessment material that fit into the context of the study. Tailor made assessment material had to be designed.

Lastly, much time was spent on the design and the implementation of the intervention programme, which led to the extension of the data collection period. All the learners within the junior primary phase (N=41) formed part of the research study. The researcher administered the diagnostic tests to all learner participants herself, which also contributed to the timeliness of the data collection procedure.

1.11 Chapter outline

The outline of the chapters is as follows:

Chapter 1: Introduction

Starting with a basic introduction and backdrop to the study, this chapter presents a comprehensive review of the research. For historical perspective on the research topic, an outline of Deaf Education in Namibia is offered. The research problem is explained, as well as the study's goals and objectives. The theoretical foundation of the study is discussed in length, and it is based on Bandura's social cognitive learning theory and Bronfenbrenner's bio-ecological system theory. Further consideration is given to the research design, research ethics, and study value, as well as the study's limitations. The chapter concludes with an outline of the chapters.

Chapter 2: Development of Deaf Education

This chapter presents the literature review that emphasise Bilingual-Bicultural Deaf Education and the theoretical foundation of Cummins' linguistic interdependence hypothesis. Literature that underpins the work that was done by Garcia on Bilingualism in education and the changes that she proposed in the form of Translanguaging is also presented. The chapter concludes with a presentation on Sign Bilingual Education policies in the Scandinavian countries in correlation with practices in countries such as South Africa and Namibia.

Chapter 3: Literacy development in Deaf Education

This chapter presents the literature review that emphasised the literacy development of a deaf child. Literature that reinforces the roles of parents and teachers of deaf learners with regard to their literacy development was deliberated on. The chapter further focuses on literature that reflects on the biliteracy of the deaf child through studying instructional strategies to teach reading and writing to deaf learners. Attention was given to reading instruction that emphasise the areas of phonemic awareness, alphabetic principle, vocabulary, fluency, and comprehension strategies. For instructional strategies that teach writing to deaf learners, the emphasis was on the sub-processes of writing that entail prewriting, organising, writing, feedback, and revising.

Chapter 4: Research methodology

This chapter discusses the research methodology and gives an outline of the procedures followed in the gathering and administration of the data. It offers detailed information on the instruments used in the collection of quantitative and qualitative data and justifies the reasons for the choice of

instruments. Deliberation is provided on the Bilingual-Bicultural literacy intervention programme that was an essential part of the study. Data analysis and validation of the study are explained and the ethical considerations that were taken into account for the protection of the research participants.

Chapter 5: Presentation, analysis and discussion of the research findings

The research findings and data analysis are summarised in this chapter. It depicts a demonstration of the research design, which is a programme evaluation within a multi-method research design, in order to describe the study's findings. The results of the quantitative and qualitative data collection are explained and debated. The quantitative instrument results are displayed, with scores before and after the Bilingual-Bicultural literacy intervention programme. This chapter also discusses qualitative data to assess the challenges of implementing a biliteracy programme at a school for deaf learners and to investigate the roles of teachers and parents in the support of biliteracy for deaf learners.

Chapter 6: Summary of major findings, conclusions and recommendations

This chapter presents the conclusion of the study. Drawn from Chapter 5, reflections are done on the main research findings that emerged from the study. Limitations of the study and the importance of the study are discussed, followed by recommendations and suggestions for future research.

1.12 Summary

The purpose of this chapter was to provide an orientation and contextualisation to the study. The general introduction, background to the study and the outline of the Namibian situation regarding the history of Deaf Education provided an outline to the plot and storyline of the study. The research problem, aims, objectives, research questions and value of the study were briefly discussed to provide reasons and purpose for the study. A full discussion on the research methodology will follow in Chapter 4. A detailed discussion on the theoretical framework within which the study was based on is also provided, followed by some limitations that were encountered when the study was conducted. The next chapters, Chapter 2 and Chapter 3, focus on a comprehensive discussion on literature that were reviewed and related to the study.

CHAPTER 2: DEVELOPMENT OF DEAF EDUCATION

2.1 Introduction

> *Millions of children around the world grow up bilingually. It is simply a consequence of the situation in which they live, either a geographical area where two or more languages are spoken or a community with multiple languages due to immigration* (Knoors & Marschark, 2012:293).

As the world is increasingly becoming interconnected, the mastery of more than one language can only be beneficial to individuals. In countries like Namibia and South Africa with more than ten national languages, Bilingualism and Multilingualism are nothing new. Despite this, Bilingual Deaf Education remains a challenge within the Namibian education context.

In this chapter, literature will be reviewed on the development of Bilingual-Bicultural Deaf Education. To start with, a comprehensive discussion is done on what Bilingual-Bicultural Deaf Education entails. Despite high expectations that were set on the Bilingual-Bicultural approach in Deaf Education in Namibia, there is a lack of results that thus far support any success of this approach. In order for the researcher to gain a better understanding of the reason/s for the lack of results in the expectations that were set for the Bilingual-Bicultural approach, a reflection was done and is presented on the model framework that is suggested by Cummins (1981). Furthermore, literature is presented on new insights on Bilingualism in educations, as suggested by Garcia, who has done extensive work on Bilingual Education in the form of Translanguaging. Finally, literature is reviewed and presented on how language planning and policies support Bilingual-Bicultural Deaf Education in the Scandinavian countries where the Bilingual-Bicultural approach has already matured, in comparison to countries like South Africa and Namibia.

2.2 Bilingual-Bicultural Deaf Education

Bilingual Education for deaf learners has no universally accepted definition. Evidently, laws and practices surrounding the role and usage of spoken and written languages differ across different national contexts. However, there is a shared philosophy and set of values that transcends across countries and cultures (Swanwick, 2016:3). According to Storbeck (2016:439), using Bilingualism in Deaf Education as an educational model acknowledges the fact that Sign Language is the primary language of the deaf learner. This bilingual approach identifies that many deaf learners

grow up in hearing communities without exposure to a language that are accessible to them and without the natural ability to acquire the language spoken by their family. The spoken language that is used by the community or family is thus accepted as the second language, with the emphasis on second language literacy development (Storbeck, 2016:439). Bilingual Education is an educational approach that identifies the unique and distinctive characteristics of Sign Language and Deaf culture, while also striving for the humanitarian and democratic aim of social inclusion and diversity (Swanwick, 2016:3). This approach emphasises that every child has the right to study and develop in a language from the moment they are born, and that any delay in language development is unacceptable (Swanwick, 2016:3). This approach became appealing to Deaf adults, many hearing parents, and hearing teachers in Deaf Education as a result of the failure of 'oral' Deaf Education, which focused solely on spoken and written languages (Knoors et al., 2014:6).

Swanwick (2016:3) and Knoors et al. (2014:2) are of the opinion that a Bilingual Education approach not only gives a deaf learner the opportunity to acquire Sign Language and a spoken or written language; it also gives them access and include them in an education system. Deaf learners benefit from a Bilingual Education approach because they may access the curriculum in their own language and in an environment that appreciates deafness, Sign Language, and Deaf culture. Swanwick (2016:3) and Knoors et al. (2014:2) go on to say that using Sign Language in society and education is a basic human right.

In some cases, the method has been classified as 'Sign Bilingual,' while in others, it has been classified as 'Bilingual-Bicultural' (Marschark & Lee, 2014:215). Storbeck (2016:439) states that a vital distinction between the standard form of the Bilingual Education model and Bilingual Education for the Deaf is an issue of Bimodality, where the one language is visual-gestural (Sign Language) and the other is written, with the aural-oral component (spoken version of the written language). The phrases 'Bimodal' and 'Bilingual,' according to Ormel and Giezen (2014:74), refer to instances in which two or more modalities are used in language learning (sign, text, and speech) and two or more languages. The term 'Bimodal Bilingualism' is used to refer to both Sign Language and a written language. One goal of most Bilingual Deaf programmes, according to Knoors et al. (2014:2), is to promote first-language acquisition and learning through an accessible Sign Language. Another goal is to incorporate Sign Language, Deaf Culture, and Deaf professionals into school in order to improve deaf learners' social and emotional development, as well as their

identity development. Eventually, most Bilingual Deaf programmes strive to increase second language skills through reading and writing, building on the foundation of Sign Language, and finally to promote academic performance. Learners are thus perceived as bilingual and bicultural, and they are considered to be able to communicate in both the hearing and deaf worlds. It is also this premise that has aided the development of Sign Bilingual programming in Deaf Education during the last three decades (Knoors et al., 2014:2).

The Namibian Deaf education system also adopted the Bilingual-Bicultural approach in the hope to reach the same goals for deaf learners as stated above and as stated by Mahsie (1995), which are "grade-level academic achievement, full participation in society, fluency in both the languages of the majority and that of the Deaf community" (Storbeck, 2016:439). The concern is that what was envisioned with this approach is not happening in Namibian schools for deaf learners, as deaf learners continue to fail in meeting the demand of junior and secondary basic education (*New Era Newspaper*, 2016).

According to Knoors and Marschark (2014:95), the theoretical foundation of the Bilingual Deaf Education approach profoundly relies on the premises of Cummins' (1981) linguistic interdependence hypothesis, which is that first-language competency is necessary to develop a second language. Mayer and Akamatsu (2003:137) believe that if deaf learners develop appropriate abilities in their native Sign Language as their first language, a positive transfer will occur, allowing them to establish literacy in a second language, which in the instance of the Namibian deaf learner will be Written English. In the quest to understand better why the bilingual approach has not yet produced the desired results in Deaf Education in Namibia and the challenges that are faced in the implementation of a biliteracy programme, the researcher did some reflection on Cummins' proposed model.

2.3 Reflection on Cummins' model

Cummins (1996:110) proposes a model as a framework for thinking about how first language ability might be understood as strongly assisting the learning of a second language. He claims that a shared underlying skill across languages allows for positive transfer if a second language is sufficiently exposed to and motivated to learn. According to Knoors and Marschark (2014:96) and Holzinger and Fellinger (2014:102), this implies that transfer will only occur if learners are

proficient in their first language, if they receive proper input in the second language and if they are motivated to learn that language. Holzinger and Fellinger (2014:102) state that Cummins separated between basic interpersonal communicative language skills and general cognitive and academic language skills. Language skills beyond the surface level, language-related problem-solving skills, and literacy skills are all examples of general cognitive and academic language skills. According to Holzinger and Fellinger (2014:102), based on the interdependence hypothesis, this basic cognitive and academic proficiency is ubiquitous across languages, allowing for the transfer of common higher-level language and literacy-related skills. It is further implied by Cummins that transfer will occur not only from first to second language, but also from a second to a first language (Holzinger & Fellinger, 2014:102). When this hypothesis is applied to bilingual models of education for deaf learners, it suggests that if Sign Language is used as the first language, proficiency in Sign Language will lead to a higher level of conceptual and linguistic proficiency as well as literacy in the second language (Holzinger & Fellinger, 2014:102).

According to Lane, Hoffmeister, and Bahan (1995:27), most deaf children of Deaf parents perform better in all academic, linguistic, and social areas than deaf children of hearing parents. In comparison to deaf children of hearing parents, Knoors and Marschark (2012:293) agree that deaf children of Deaf parents who communicate in natural Sign Language may have an advantage in becoming bilingual by learning a written or spoken language. When compared to deaf children of hearing parents, who will scarcely share an efficient way of communication with their parents, deaf children of Deaf parents are welcomed into a language acquisition-friendly atmosphere from birth. The accessibility of fluent language models from birth for deaf children with Deaf parents result in their acquisition of written language being more advanced than deaf children with hearing parents (Knoors & Marschark, 2012:293). As stated earlier, based on Bandura's social cognitive learning theory, learning can take place by watching other people who act as models, portraying the appropriate behaviour and skills (Gray & MacBlain, 2012:94). The parents of a child are influential models in his or her life, this is because of the high amount of regularity and intensity with which children and their parents interact and the affection children have for parents and their goal to be like them (Salkind, 2004:212).

According to Enns (2006:22), fewer than 10% of learners that are born deaf come from families with deaf parents or relatives (also see Clark et al., 2020:1340). Deaf children with Deaf relatives

learn Sign Language and have relatively normal socio-emotional family relationships. The traditional approach to bilingual programming for this minority of deaf learners would be to develop on the 'legacy' language while also teaching a spoken or written language as a second language. Enns (2006:22) further states that for more than 90% of deaf learners, the circumstances are rather different. In this situation, the deaf learner is the first deaf person in the family. According to Lane et al. (1995:30), for hearing parents to encounter deafness in their child is mostly unsuspected and distressing. The parents and siblings of these deaf learners rarely have signed language communication skills that are required to provide these learners with immediate access to the acquisition of a natural language. This unforeseen conditions can limit access to normal socio-emotional family interaction. For these learners to benefit from bilingual programmes, they must first gain competency in Sign Language before moving on to learning a spoken language as a second language (Enns, 2006:22).

Even though the theoretical basis of Bilingual Deaf Education relies heavily on Cummins' linguistic interdependence hypothesis, Knoors and Marschark (2014:96) believe that current knowledge about bilingual language acquisition and potential cognitive consequences entails much more than Cummins' theoretical framework. Knoors and Marschark (2014:95) argue that Cummins' proposal that the transfer of language proficiency from a first language to a second language is easier when the language user already knows the first language neglects specific conditions described by him for such a transfer to occur. They go on to say that for a deaf learner who wants to acquire English as a second language, this means that the transfer will only happen if the deaf learner is skilled in Sign Language, has appropriate input of the second (spoken) language, and is motivated to learn the second language. Knoors and Marschark (2014:96) believe that a crucial point in comprehending the applicability of Cummins' hypothesis is the question of deaf learners' opportunities to become proficient in Sign Language as their first language. A rich and consistent Sign Language input must be provided during the early years of life to attain this objective (also see Howerton-Fox & Falk, 2019:2). This means that for deaf learners with Deaf parents, this is a potentially achievable option, but what then about the 90+% of deaf learners with hearing parents?

The application of Cummins' paradigm to Bilingual Deaf Education has been heavily questioned, according to Holzinger & Fellinger (2014:102). According to them, there is no common mode

between Sign Language as a first language and a written or spoken language as a second language. Holzinger and Fellinger (2014:102) state that studies have found indications for an only limited transfer of morphosyntactic and lexical or semantic spoken language skills from a first language to a second language, for those languages which have a common mode. According to Holzinger and Fellinger (2014:103), evidence suggests that second language learners' literacy abilities are more interdependent than their spoken language abilities. This means that the growth of second-language literacy has been linked to better levels of first-language literacy. Due to the lack of a written form for Sign Languages that may serve as a foundation for first language literacy that could be translated to spoken second language literacy, applying Cummins' model to Bilingual Deaf Education is problematic (Holzinger & Fellinger, 2014:103). These differences in modality between a spoken and a signed language makes direct transfer from Sign Language to spoken language literacy questionable.

Grushkin (2017:509), believes that by developing a written form of Sign Language, the argument above can be rejected. Depending on the type of writing system that might be developed in a written form of Sign Language, deaf readers who have developed phonological decoding skills in Sign Language might more easily transfer the skill to decoding Written English (Grushkin, 2017:515). Conversely it might also be that phonological decoding is not essential for reading in Sign Language. According to Grushkin (2017:516), in such instances the emphasis on phonological decoding in Written English would need to be de-emphasised in favour of lexical, syntactic and metacognitive strategies for learning to read and write English.

In the absence of a written version of Sign Language, Holzinger and Fellinger (2014:103) argue that there is no clear evidence that Sign Language abilities can lead to a deeper level of conceptual and linguistic proficiency that will aid literacy learning in a spoken second language. Access to a spoken form of a second language, participation in social communication, and access to situations that promote complex language acquisition are limited for learners who are deaf. This results in deaf learners indicating deficits in vocabulary, morphosyntax, pragmatics and general knowledge. According to Holzinger and Fellinger (2014:103), all these aspects are linked with problems in reading comprehension. Word identification problems in reading comprehension can also be linked to a lack of access to a spoken second language's phonological code. This is due to the deaf learners' limited speech discrimination and speech production abilities (Holzinger & Fellinger,

2014:103). However, according to Hoffmeister and Caldwell-Harris (2014:238), a study of Deaf adults who learned Sign Language from birth (native Deaf Sign Language users) and Deaf adults who became deaf later in life, who learned English from birth (acquired a hearing loss later than 5 years of age), revealed that the two groups had more advanced Sign Language skills than Deaf adults who were born deaf and did not learn to sign until later in life. The group of Deaf adults who learnt Sign Language later had both poor Sign Language skills and a poor English reading ability. According to Hoffmeister and Caldwell-Harris (2014:239), studying a Sign Language as a first language will help learners acquire a spoken language as a second language later on (in its written form). The same will apply for acquiring a spoken language as a first language as it will support later learning of a Sign Language as a second language. Dostal and Wolbers (2014:246) state that knowledge of a language, including a manual language, with a different language structure as that of a written language is better for learning to read and write than not knowing any language.

According to the researcher, a lot can be learnt from the reflection that was done on Cummins' model. A clear link can be made as to some of the reasons that the Bilingual-Bicultural approach, which has been adopted by the Namibian Deaf Education system, has not yet shown the expected positive results. The majority of deaf learners in Namibia are born to hearing parents and, in most cases, only acquire NSL when they are exposed to school. Even then they are not given enough time to fully acquire NSL as they are simultaneously exposed to two languages (NSL and Written English) in school, making them dual-language learners (Dostal & Wolbers, 2014:247). When deaf learners in Namibia start school at the age of six years they are placed in a pre-primary classroom where they can acquire NSL for one full year. When they start school at a later age, they are placed in Grade 1 and must acquire both NSL and Written English simultaneously. To gain further insight into an applicable method for an intervention programme for deaf learners that can narrow their delay in language learning and literacy, the researcher reviewed the literature on the work that was done by Garcia and the changes she proposes on how Bilingualism can be viewed with Deaf Education.

2.4 Translanguaging

According to Garcia and Cole (2014:106), the concept of Bilingualism in education has traditionally been based on the concept of diglossia, or the belief that stable Bilingualism requires functional distinction between the two languages. Garcia (1997:417) refers to this as the compartmentalisation of the two languages as a sociolinguistic premise of Bilingual-Bicultural education. Separating languages to develop them fully has thus become the core standard for Bilingual Education programmes. As a result, traditional Bilingual Education programmes assigned one language to a given time, a specific teacher, a certain subject, or a unique location (Garcia & Cole, 2014:106). Given the complex and dynamic language use of Deaf people, it became evident that splitting bilinguals' languages in this way is unnatural and does not reflect the language use of any bilingual individual (Garcia & Cole, 2014:106). The initial hypothesis was that when teaching language minorities, the strict insistence on separating languages as a means of isolating the weaker, non-dominant language from that of the majority stronger language limits the language choices available to bilinguals, given that all bilinguals use their languages in interdependent ways (Garcia & Cole, 2014:106).

Garcia and Cole (2014:106) argue that the sociolinguistic arrangement of putting two languages on an equal but separate footing overlooks the complex language practices of all bilingual learners in their quest to neutralise the power magnitudes of two languages; that is, to work against the linguistic hierarchy of a majority and a minority language, or a spoken and a signed language. Keeping one language out of reach of the other works against the development of Bilingualism and the adoption of a bilingual identity. This revelation brought Garcia to propose the concept of 'Transglossia'. According to Garcia and Cole (2014:106), Transglossia is a communicative network that is both stable and dynamic, with various languages acting in a functional interrelationship. It has little to do with the preservation of asymmetry in linguistic practices by maintaining two or more languages of nation-states and other socioeconomic groups. Thus, the study of Bilingualism moves away from the defence of national languages and ideology and instead focuses on the fluid language practices of bilingual persons, whether Deaf or not (Garcia & Cole, 2014:106).

Scholars of Bilingualism for hearing bilinguals have primarily talked about code-mixing or code-switching between languages as a pragmatic option that serves a specific function in a specific setting. The idea behind Deaf Bilingualism is that, unlike hearing bilinguals, the Deaf's fluidity of language practices represents a 'pooling of resources' to generate meaning rather than a pragmatic decision. This 'language mixing' for the Deaf is an important instrument that develops the engine of bilingual development through metalinguistic reflection, requiring different teaching strategies (Garcia & Cole, 2014:10). In Deaf Education, this will relate to deaf learners' and teachers' use of sign, spoken, and written language in the classroom (Swanwick, 2017:2). Garcia was inspired by this concept, as well as observations that hearing bilinguals behave in a similar manner, to abandon the limits of code-switching for all bilinguals and talk instead of translanguaging (Garcia & Cole, 2014:107). A Welsh bilingual teacher coined the word used to characterise this technique (Garcia & Cole, 2014:107; Swanwick, 2017:4). It was developed by Garcia as a theoretical and analytic idea. It currently refers to the process by which bilinguals engage in sophisticated discursive practices. It is viewed from a bilingual perspective, which encompasses all of bilinguals' complicated language practices, including those of the Deaf (Garcia & Cole, 2014:107).

Garcia and Cole (2014:108) further argue that Bilingual Education programmes are commonly involved in the separation of languages that are often simultaneously used by bilinguals. The belief that bilinguals' language practices must be carried out in isolation in schools has hampered not only their multilingual growth, but also their education. Translanguaging as a pedagogy, according to Garcia and Cole (2014:108), is a method of bridging the gap between nation-states' global plans for educated citizens and the local histories of all people who speak different languages. Translanguaging as a bilingual pedagogy is critical for making sense of language and content, as well as for building on learners' and teachers' complex and numerous language practices (Garcia & Cole, 2014:108).

When viewed through the eyes of a Deaf person, it becomes further evident that teachers who employ the whole linguistic repertoire of all bilingual learners are more effective educators. According to Swanwick (2017:2), this is a positive step toward better understanding deaf learners' language repertoires and potentials, and so improving Bilingual Deaf Education. Translanguaging thus represents an additive vision of Bilingualism and Multilingualism for deaf learners, and it represents an original departure from, rather than a repackaging of, standard Deaf Education

teaching approaches. According to Swanwick (2017:2), additive Bilingual Education attempts to improve learners' competency in both, or all, of their languages while also respecting, appreciating, and celebrating the linguistic and cultural legacy that learners bring to the classroom. Translanguaging should thus be viewed as a progression of additive Bilingual Education, rather than as a strategy that undermines and jeopardises the development of distinct languages and cultures (Swanwick, 2017:3).

According to Bruwer (2013:87), both Namibian Sign Language and Written English are provided as independent subjects with separate time slots in the Namibian Deaf Education system, and both languages have their own syllabi for teachers to follow. The two languages are thus fully compartmentalised and treated differently. However, as proposed by Garcia, the two languages should be treated in the same manner and used in combination make better use of the learners' and teachers' full language repertoires and language potentials to teach and learn through the Bilingual-Bimodal Education.

2.5 Sign Bilingual Education policies

According to Hult and Compton (2012:602), languages play an essential role in Deaf Education. One key consideration is the purpose of Sign Language in the deaf child's education. Another important factor to consider is the ability to develop linguistic ability in both Sign Language and a society's spoken language. Language planning in education, according to Hult and Compton (2012:602), is planning that is focused on education, making it a productive area of research for Sign Language policy and planning in Deaf Education. Hult and Compton (2012:604) continue to discuss two types of language planning in education. These are status planning and acquisition planning. Status planning, often known as the core form of planning, comprises decisions relating to a language's societal functions (Hult & Compton, 2012:604). It covers both formal and informal aspects of language use and it usually falls under government and institutional supervision. Language planning in education is thus considered a major site for status planning, as it is the domain that determines the medium of instruction and, where it is determined, which additional languages will be taught as subjects (Hult & Compton, 2012:602).

Reagan (2001:151) believes that status planning in relation to Sign Language can also include considerations about granting official or quasi-official status upon it. According to Reagan

(2001:151), such choices are uncommon, with only a few nations, such as Sweden and Denmark, having given Sign Language official status. Reagan (2001:151) also believes that the Declaration on the Recognition of the Deaf's National Sign Language, passed at the Third European Congress on Sign Language Research in Hamburg in 1989, as well as the World Federation of the Deaf's call for Sign Language recognition in 1991, boosted the need for status planning for Sign Language (Reagan, 2001:151). Attempts to gain official recognition for a Sign Language are frequently focused on having it recognised as a "real language" and allowing it to be taught, rather than recognising it in an official capacity. The majority of Sign Language status planning has taken place, and continues to take place, in the educational sphere (Reagan, 2001:151), particularly in nations such as South Africa and Namibia.

Acquisition planning is a technique for emphasising characteristics of language planning that are distinctive to a language's users. This sort of planning, according to Hult and Compton (2012:604), focuses on how users can be helped in expanding their linguistic repertoires by offering continuing language development and chances for users to learn additional languages. Hult and Compton (2012:604) think that the acquisition planning does not only need to focus on educational institutions. The reason for this is that there are incentives and chances to learn and improve a language outside of the classroom. Formal education, on the other hand, is an area where national educational policies that influence curricular papers as well as the distribution of resources in the form of staff and materials can shape how languages are learnt (Hult & Compton, 2012:604). According to Lo Bianco (2010:147), language teaching policies are typically described through acquisition planning. Policies are the most common way of organising, managing, and manipulating instruction, and they can also serve as guidance for which methods and approaches to use (Shohamy, 2006:78). To gain a better understanding of language planning and Sign Bilingual Education policies, the researcher looks at what has been done in Scandinavian countries, which, in comparison to countries like South Africa and Namibia, have already implemented policies to support Bilingual-Bicultural education for the deaf decades ago.

2.5.1 Scandinavian countries

The concept of Bilingual Education as a legal right and individual prerogative, according to Swanwick, Hendar, Dammeyer, Kristoffersen, Salter and Simonsen, (2014:294), motivated legislative changes and curriculum transformation in Sweden, Norway, and Denmark. This

important alteration in Deaf Education fully engaged the parents of deaf children. According to Lo Bianco (2010:156), the primary language socialisation is in the home, with parents or caregivers, as this is where the language is developed, and proto-literacy emerges. Swanwick et al. (2014:294) go on to say that while the terminology used to describe language provision varies by country, the education goal, which is to offer deaf children with a Bilingual-Bicultural education in order to enable early language acquisition and fair access to the curriculum stays the same. Each of these countries altered their curricula and syllabi to use Sign Language as the deaf children's primary language of instruction (Swanwick et al., 2014:294).

According to Hult and Compton (2012:606), specific documentation that was considered in Sweden entailed the Education Act, the national curricula, and syllabi. Deaf learners followed the same national compulsory education curriculum as mainstream learners, with some changes and accommodations indicated in the Ordinance for Special Schools and the special school syllabi that deaf learners had access to. The Special Schools Ordinance and Syllabi apply to government-funded specific schools that offer the same curriculum as normal schools but only provide special accommodations for deaf learners. Although special schools are officially mentioned in policy, there are additional options for placement in Sweden, including the normal classroom (Hult & Compton, 2012:606). In 1981, Sweden's special schools for deaf learners became officially bilingual. Any deaf child in Norway is entitled to a Bilingual Bimodal Education at his or her local school. The development of a nationwide, unique bilingual curriculum for deaf learners is complemented by the right to Bilingual Bimodal Education. Changes in Denmark in the early 1980s led in a legislative revision in 1991 that made access to Sign Language in schools a legal right (Swanwick et al., 2014:294). Teachers in these Scandinavian countries were educated to use Sign Language and teach according to the new curriculum as a result of the implementation of these modifications. Courses in Sign Language for parents have also been offered. According to Swanwick et al. (2014:294), parents in Norway were presented with a 40-week Sign Language training programme over a 16-year period, which included housing, travel expenses, and wage reimbursement. Parents claimed that they were able to learn sufficient Sign Language competency to assist their children with their homework and speak with them in a way that allow the family members to communicate.

According to Marschark and Lee (2014:222), examinations of more than 2 100 deaf people in Sweden show that, while deaf people's educational achievement has increased since Deaf Education in Sweden became bilingual, hearing people's educational attainment has increased much more. The difference in the academic achievement of deaf learners is thus still far below those of their hearing peers. Mayer and Leigh (2010:177) point out that there is no evidence that deaf learners in bilingual programmes are attaining the age-appropriate language and literacy levels expected when bilingual programmes were originally established. According to Marschark and Lee (2014:221), Bilingual Education is losing favour in Scandinavian countries, where it first gained traction in the 1970s (Knoors et al., 2014:1). A decrease in popularity of Bilingual Education was noted to the point where it is now only offered at schools for deaf learners and these schools are also experiencing a decrease in popularity. According to Marschark and Lee (2014:221), the Bilingual Deaf Education paradigm, which emphasises Sign Language and writing as key paths to language proficiency while de-emphasising spoken language, is part of the explanation for the drop in Bilingualism for deaf learners in mainstream schools.

Cochlear implants, according to Walker and Tomblin (2014:134), are a new breakthrough that has revolutionised audiological therapy for children with substantial hearing loss since the 1990s (also see Mayer & Tresek, 2019:2). Children with serious hearing loss can now hear outdoor sounds thanks to this technology. It has a positive impact on these children's speech perception, speech output, and spoken language skills (Walker & Tomblin, 2014:134). Hearing aids have been modified by other digital innovations, and this range of auditory implants has substantially enhanced access to audition for those with various levels and types of hearing loss. Hearing screening programmes for new-borns have been introduced as a result of advancements in screening and diagnostic technology. This enables for the identification of congenitally deaf new-borns soon after delivery. Audiologists can therefore effectively fit hearing aids and cochlear implants to extremely young children, allowing them to audition during their first year (Swanwick et al., 2014:296).

As more deaf children attain the ability to learn spoken language, their marginalisation in many Deaf Education settings sends the wrong message to their parents, of whom over 90% are of the population are hearing. Swanwick et al. (2014:293) observe that, despite the fact that deaf children are becoming more bilingual and, in some cases, multilingual, contemporary discourses on

language and deafness continue to impose limits on language teaching that are detrimental to developing practices. Many deaf children go back and forth between Sign Language and spoken language in their daily lives for a variety of reasons. By mixing and swapping modalities, they can go over language barriers and engage in 'Translanguaging'. Language policies, on the other hand, do not take this flexibility into consideration. As deaf children's access to speech sounds is becoming more advanced, even if they use Sign Language at school to understand the curriculum, a growing number of deaf children have access to one or two spoken languages outside of the school context. Language standards that distinguish between sign and spoken language do not reflect or enable practitioners to plan for the multilingual and bimodal learners' learning needs (Swanwick et al., 2014:293). As a result, according to Knoors and Marschark (2012:291), language planning and language policies should be reassessed to ensure that they are appropriate for the growing diversity of deaf children.

Even if Bilingual Education isn't the greatest way to educate all deaf learners, it's safe to say that Bilingual Deaf Education is a solid educational alternative for many deaf learners who want to improve their social and emotional development (Knoors et al., 2014:14). The absence of scientific support for Bilingual Deaf Education makes advocating for explicit Bilingual Education programmes for deaf learners difficult. The lack of strong support for Bilingual Deaf Education is because of the complexity of the issue. Deaf learners differ from their hearing peers in a number of ways. Differences in linguistic and cognitive development between deaf and hearing learners, as well as among deaf learners themselves, make examinations of their academic accomplishment problematic (Swanwick et al., 2014).

According to Knoors and Marschark (2012:301), some development is required for deaf learners for whom Bilingual Education is appropriate. They propose that these learners be given more opportunities to develop true Sign Language fluency, which is the first step toward transferring skills from Sign Language to written or spoken language. Early in their lives, an adequate environment should be created for them to have the opportunity to get information from fluent models of both Sign Language and a spoken language. Knoors and Marschark (2012:301) further suggest that an appropriate environment is presumed, that parents should be provided with intensive Sign Language classes so that they can make their input in Sign Language as rich and accurate as possible. To further support effective communication and the acquisition of basic

interpersonal communication skills (BICS) at home, video-based, in-home training should also be provided. Knoors and Marschark (2012:301) state that this bilingual environment presumes the availability of professionals in the fields that involve family councillors and interventionists, as well as teachers who are sufficiently trained and skilled in Sign Language and Deaf Education. These teachers should not only be able to teach deaf learners, but should also teach in Sign Language.

2.5.2 South Africa

According to Knoors and Marschark (2014:1), other countries rapidly followed the Scandinavian countries in providing Bilingual Education as an educational strategy in schools for deaf learners. The Deaf Federation of South Africa began to promote the Bilingual-Bicultural method in the 1990s (Van Staden et al., 2009:52). Reagan (2008:165) believes that South Africa's language planning and policy has a lengthy and complicated history. In contrast to the Scandinavian countries, South Africa, which was founded on apartheid ideology, has a long history of educational and linguistic policy challenges relating to individual human rights in the areas of education, language, and culture. The South African government is really concerned about this (Van Staden et al., 2009:53). Despite this difficulty, extensive policy action has been undertaken to conserve and develop the 11 official languages, including South African Sign Language (SASL). SASL is mentioned in the South African Constitution, the South African Schools Act, and the Language in Education Policy (Reagan, 2008:176; Van Staden et al., 2009:53).

White Paper 6: Special Needs Education, building an Inclusive Education and Training System was published by the South African Department of Education in 2001 (Department of Education, 2001:3). In the executive summary of this paper, it is stated that suggestions were presented in a combined report by two independent organisations of investigating teams, which include the following:

> *the education and training system should promote education for all and foster the development of inclusive and supportive centres of learning that would enable all learners to participate actively in the education process, so that they could develop and extend their potential and participate as equal members of society* (Department of Education, 2001:5).

According to the researcher, this includes education and the active participation of deaf learners. As part of defining Inclusive Education in the document, it is stated that to

> *change attitudes, behaviour, teaching methods, curricula, and environment to meet the needs of all learners,*

they continue to define Inclusive Education by stating that it is also to

> *maximise the participation of all learners in the culture and the curriculum of educational institutions and uncovering and minimising barriers to learning* (Department of Education, 2001:7).

Finally, by accepting the approach to Inclusive Education, the South African Department of Education acknowledged that

> *the learners who are most vulnerable to barriers to learning and exclusion in South Africa are those who have historically been termed 'learners with special educational needs', that is learners with disability and impairment* (Department of Education, 2001:7).

According to the researcher, removing educational hurdles is given a lot of attention. For the deaf child a primary barrier to education is language. Full inclusion for a deaf learner, according to the World Federation of the Deaf (2007), means providing a fully supportive Sign Language environment that allows deaf learners to achieve their full educational, social, and emotional potential, including full literacy in at least one written language, such as English.

In line with the continuous development and promotion of a Sign Language environment, *The Citizen* (2018) reports that "*SASL has been officially recognised as a home language in the country's education system and part of the overt curriculum*." This entails that SASL is now formally included in the curriculum as one of the examinable subjects for the South African National Senior Certificate. The Parliament's review committee also recommended that SASL become the 12th official language by doing the necessary amendments (*The Citizen*, 2017). Despite the progress made in promoting and establishing SASL as the primary and natural language for deaf people (Van Staden et al., 2009:53), Grade 12 scores at schools for deaf learners continue to be cause for concern (Swift, 2016). Mcilroy (2013:1) notes that the South African education system has made significant strides towards the inclusion of deaf learners and the development of SASL as well as a SASL curriculum. However, despite the SASL curriculum that underwrites the bilingual approach as the educational approach of choice in South Africa for deaf learners, South

Africa has still not taken a standpoint on the issue of which approach to use to teach deaf learners. The result is that schools for the deaf instead adopt approaches they prefer. This covers a wide range of educational methodologies, ranging from strictly oral schools to strongly Sign Language schools. The majority, however, follow the middle ground of using a mixture of oral language and Sign Language (Mcilroy, 2013:1). Even though the United Nations Convention on the Rights of Persons with Disabilities has paved the path for a human rights discourse in policy documents, the reality in South Africa, according to Mcilroy (2013:1), is that Bilingualism in Deaf Education is still a new tactic.

In line with the suggestions that are made by Knoors and Marschark (2012:301), Reagan (2008:181) also makes some recommendations that relate to educational practices and language policy issues in South Africa. Reagan (2008) at the time believed that SASL should be recognised as a Deaf Education medium of instruction. It will, in his opinion, provide a good foundation in SASL for deaf learners. Teachers of deaf learners will be required to demonstrate communicative competency in SASL after that. He goes on to say that the proper steps should be made to ensure that Deaf people are recruited not only for teaching roles in Deaf Education, but also for teaching positions in other educational settings. Individuals and groups who are deaf or hard of hearing should be taught SASL. Hearing parents of deaf learners, prospective instructors of deaf learners, and other professionals in the sector should be able to interact with the Deaf community. SASL should also be offered at the university level, not just as a second or supplemental language for learners in government schools. SASL should be recognised as an official language of South Africa, with the same status as other official languages. The Pan South African Language Board and other relevant government organisations should put more effort into language planning policies that target SASL, and assistance should be provided specifically for SASL teaching and learning, as well as its use in public settings (Reagan, 2008:181).

2.5.3 Namibia

Focusing on the educational context of deaf learners in Namibia, the study of Bruwer (2013) confirms that the Namibian Department of Education also adopted the Bilingual-Bicultural approach in the teaching of deaf learners. As stated before, the Namibian government has committed itself to various national and international agreements in establishing an Inclusive

Education system and so envisioned to leave no child behind by providing education for all (Bruwer & February, 2019:35). According to Ellis and Yates (2010:13) contrary to national policies and laws, and conventions that Namibia was party to at the time, thousands of Deaf Namibians remained excluded from education and employment. This, according to the researcher, can form part of the reason why the Bilingual-Bicultural approach that was adopted has still not produced the desired results in Namibia.

The Sector Policy on Inclusive Education was approved by Namibia's Cabinet in 2013. A Curriculum Framework for Inclusive Education was created based on the Sector Policy on Inclusive Education. The reason for this was to ensure that the Sector Policy on Inclusive Education's goals and objectives were met in a consistent and long-term manner (Ministry of Education, 2014a:4). This document, still in draft form, is a sister document to the National Curriculum for Basic Education that was revised and implemented in 2015. Within the Draft Curriculum Framework for Inclusive Education, it is prescribed that all schools are expected to be inclusive schools, and all schools are expected to make provision for gifted learners, learners with physical impairments, learners with mild impairments such as low vision, mild to moderate hearing loss, mild to moderate learning difficulties and learners with emotional and behavioural difficulties and educational lags (Ministry of Education, 2014a:6). Within Inclusive Schools, Resource Units are expected to be established that serve learners with severe difficulties and those learners who cannot cope within the mainstream classes. Within selected Inclusive Schools, these Resource Units should have the same structure as the Resource Schools, with additional specialised equipment and key human resources. Learning progress should be guided and evaluated according to an individual learning plan per learner within the resource unit (Ministry of Education, 2014a:6). It is further stated that each region within Namibia is to have a Resource School. These Resource Schools are the current Special Schools. The purpose of the Resource School is to form part of a Multi-Disciplinary Resource Centre. The Resource Schools are then to serve cluster schools within a region. As stated earlier, this document still needs to be approved by the Namibian Cabinet. Special schools are thus currently still in full existence (Ministry of Education, 2014a:7).

As previously stated, NSL is the mother tongue or first language of deaf learners in Namibia, and it is also the medium of instruction in schools for deaf learners and inclusive schools that host deaf learners, alongside Written English. Upon the revision of the National Curriculum for Basic

Education in 2014, all NSL syllabi were revised and Written English Syllabi were introduced with the revised NSL syllabi for deaf learners. These official Written English syllabi were rolled out in 2015. Even though, according to Bruwer (2013:66), NSL was recognised and added to the draft revised Language Policy in 2010 as a Namibian language, it has been featuring as a school subject since 2004 (Ellis, 2011:7). In 2009, the first group of Grade 12 learners wrote an NSL Cambridge-moderated examination for their national examination.

The integration of the deaf child, as well as the acknowledgement of NSL, the Deaf Community, and Deaf Culture, took a lot of time and effort in Namibia, just as it did in South Africa. Bilingualism in Deaf Education is a little-known strategy in deaf schools. It is specified and advocated in policy documents, yet teachers are unaware of this teaching method. Teachers for deaf learners, according to a research by Bruwer (2013:91), are rarely aware of these policies. The irony is that it is precisely teachers who operate as system soldiers, the people who carry out instructions by internalising policy ideas and goals as articulated in the curriculum, textbooks, and other language-related resources (Shohamy, 2006:78). As a result, teachers play a significant role in policy implementation.

As previously stated, there is much to be learned from other countries, such as the Scandinavian countries, which enacted laws in support of Sign Bilingual Education in the 1980s and are now amending them. According to Knoors and Marschark (2012:291), reviewing language planning and policy in Deaf Education will necessitate a re-evaluation of the role of Sign Language in deaf children's lives. The question of whether natural Sign Languages are full languages, whether there is a Deaf community for whom Sign Language is both an identifying feature and a primary mode of communication, whether Sign Language and Deaf culture are essential pillars of the Deaf community, or whether growing up with Sign Language and Deaf culture can be beneficial for deaf children is no longer relevant. It's no longer a political or philosophical problem; instead, it's about giving deaf children the best educational and personal opportunities possible (Knoors & Marschark, 2012:291). Deaf children must eventually engage completely in society, or at the very least have a social desire to do so. This means, among other things, having the best possible reading and writing skills (Knoors & Marschark, 2012:292).

According to the researcher, it has become urgent for South African and Namibian policymakers to assess what progress has been done in the educational sphere and how these progresses fit in

with the ever-changing realities of deaf children today. Policy documents are in existence in the Namibian setting, according to Bruwer (2013:91), but the influence that these documents are meant to have has yet to be seen. The question then becomes why and what has to be done to carry out the policy documents' goals and objectives. The ideas made by Knoors and Marschark (2012) as well as Reagan (2008) will be carefully considered for the goal of this study and to determine the most relevant instructional strategies for teaching the bilingual approach to deaf learners.

2.6 Summary

This chapter's literature review began with an explanation of what Bilingual-Bicultural Deaf Education comprises. The goal of most Bilingual Deaf programmes, according to the discussions, is to promote first-language acquisition and learning through the provision of an accessible Sign Language, the incorporation of Sign Language, Deaf culture, and Deaf professionals in education to enhance deaf learners' social and emotional development and identity development, and to improve proficiency in the second language through reading and writing, building on the foundation of the first language. Reflection was done on Cummins' model framework and clear relations can be made for possible reasons why the Bilingual-Bicultural approach adopted in Namibia has not yet shown the expected results. Most deaf learners in Namibia are born to hearing parents and, in most cases, late language acquisition occurs. For most deaf learners' language acquisition only start when they are enrolled to school and even then, they are not given enough time to fully acquire one language then they are exposed to another. Garcia's view on Bilingualism in education and the changes she proposed were viewed. A new perspective was gained as to the diverse needs of deaf learners regarding language learning and how they can be catered for through Translanguaging. Lastly, the researcher reviewed the literature on Sign Bilingual Education Policies in Scandinavian countries, South Africa, and Namibia. The knowledge gathered in this regard was that policy documents for Deaf Education should prioritise providing deaf learners with the best possible educational and personal achievement opportunities by adapting to each deaf child's individual needs. Chapter 3 will review literature on parental involvement in Deaf Education as well as the role and responsibilities of teachers in Deaf Education. Finally, literature on deaf learners' biliteracy development and how to educate a deaf child to read and write English will be studied.

CHAPTER 3: LITERACY DEVELOPMENT IN DEAF EDUCATION

3.1 Introduction

> *Learning to read is vital for individuals to participate in society, even more so when those individuals are deaf.* (Hermans et al., 2008:518)

Appropriate reading and writing skills, sometimes known as literacy skills, are essential for success in school settings and subsequently in professional and employment possibilities (Hrastinski & Wilbur, 2016:156). Bandura claims in his social cognitive learning theory that social influences play a significant role in a child's learning and development (Gray & MacBlain, 2012:91). The child's development will be enhanced if the setting allows the child to observe and participate in activities with the help of individuals who have superior understanding and skill (Rosa & Tudge, 2013:248). Schirmer and Williams (2003:110) believe that the basis of reading abilities begins in the social setting of the home and community, which is consistent with the theoretical framework of this study. Early experiences with print have a direct impact on a child's knowledge of reading in school. According to Hrastinski and Wilbur (2016:156), reading begins with the development of pre-literacy skills in early life, continues through formal reading instruction in school, and broadens as a result of further education, as well as social and recreational experience. Without age-appropriate reading and writing skills, participation in classroom activities is limited and the risk of academic failure is high, leading to employment and social adjustment issues (Hrastinski & Wilbur, 2016:156).

Deaf learners, according to numerous studies, have much inferior reading comprehension, literacy skills, and overall academic achievement than their hearing peers. (Qi & Mitchell, 2012:14; Van Staden, 2013:306; Hrastinski & Wilbur, 2016:156). Deaf learners have a difficult time learning to read. The association between deafness and low English literacy skills is complicated, and factors such as language competency, academic accomplishment, cognitive capacities, and family background, as well as the construction of reading proficiency tests, all play a role to this complexity (Hrastinski & Wilbur, 2016:157). Deaf learners rarely achieve conversational proficiency in spoken or signed languages. This implies that at the time they start learning to read, they lack the appropriate vocabulary, sentence structuring skills, and world knowledge that hearing

children have (Hrastinski & Wilbur, 2016:157). According to Hrastinski and Wilbur (2016:157), there are research papers that reveal deaf people who have mastered reading English to an adequate level. Many of them are proficient in Sign Language and possess a comprehensive understanding of Written English. In this chapter, literature will be reviewed based on the social cognitive learning theory and bio-ecological theory that place parents and teachers as significant contributors and role models in children's learning and development. Further literature will then be reviewed on the reading and writing methodology that informs literacy development in deaf learners.

3.2 Parental involvement in Deaf Education

Stewart and Clarke (2003:148) are of the opinion that the acquisition of a language begins at home. This makes it the parents' responsibility to ensure that their deaf child is exposed to language from as many sources and in as many forms as possible. Stewart and Clarke (2003:148), and Humphries et al. (2019:134) state that the decision about the type of communication that parents would prefer to use with their deaf child should be made as early as possible. The reason for this is that the early years are very crucial for a child to acquire language. Early language acquisition is critical for neurological and academic development (Clark et al., 2020:1341). According to Knoors and Marschark (2012:292), children learn their language from their parents through engagement and communication. They will eventually broaden their linguistic horizons through social engagement with classmates. This approach is consistent with Bandura's social cognitive learning theory and Bronfenbrenner's bio-ecological theory, both of which emphasise the central role of parents in a child's development, in this case language development. Parents are the first models that the child will learn from and they form part of the bio-ecological microsystem, which is the most proximal structure of a child's world. Parental support in their children's school-based education is a powerful predictor of their success (Garcia & Kleifgen, 2011:182). Parents should be seen as active participants in their children's education and as supporters within the immediate school community.

According to Holzinger and Fellinger (2014:104), the frequent observation of deaf children of Deaf parents' high academic performance and reading comprehension influenced the establishment of Sign Bilingual programmes. This positive performance was assumed to be due to the family's employment of Sign Language. According to Holzinger and Fellinger (2014:104), the usage of

Sign Language in the home may not be the only factor contributing to better academic outcomes. Other factors could include hearing loss caused by genetics, which has been linked to a lower percentage of additional disability, parental acceptance of deafness, earlier detection of deafness and natural and highly functional early parent-child relationships (Steward & Clarke, 2003:41; Holzinger & Fellinger, 2014:104; Humphries et al., 2019:135). The positive thinking and attitudes of parents of deaf children are crucial to the growth and development of the child. Parents who approach the hearing loss of their child in a positive manner will also positively influence the child's self-esteem (Sardar & Kadir, 2012:148).

Marschark (1997:224) states that studies involving hearing children indicate that parents who spend time with their children, who facilitate their children's academic and extracurricular interests and who answer their children's questions in supportive atmospheres, foster academic excellence as well as psychosocial maturity. According to Singleton and Morgan (2006:334), children are born into a system that allows them to learn their parents' or family's important meaning-making practices through interaction. Through interactions and increasing participation as members of their community, their identity develops. Language and cultural behaviours are examples of meaningful activities that are packed with beliefs and are part of a group's identity (also see Humphries et al., 2019:136). A child's language and cultural identity will develop spontaneously as a result of his or her daily interactions with his or her parents (Singleton & Morgan, 2006:334).

Holzinger and Fellinger (2014:105) state that studies show that growing up in a Deaf family can be a significant factor in the positive academic and reading performances. This includes early exposure to functional language as well as effective communication, all of which have an impact on reading comprehension. According to Holzinger and Fellinger (2014:105), several research show that using manually coded English can also help with reading comprehension development. The ability to use spoken language should thus not be ignored when investigating reading comprehension (Holzinger & Fellinger, 2014:105; Walters & De Klerk, 2014:243). Overall parental communication and academic achievement have a good and meaningful association. Parental communication and support lead to less worry and anxiety and a better view of life when children grow older (Ataabadi, Yusefi & Moradi, 2014:38).

Deaf parents, according to Hoffmeister and Caldwell-Harris (2014:239), equip their children with superior strategies to assist English literacy. Some of these strategies include matching English

print words with corresponding signs, assisting with English polysemies, and teaching meaning sets and other ways to go beyond mapping simple translation equivalents. Deaf parents offer their children assistance based on their personal experiences when their children struggle with English in a bilingual learning mode. They recall and discuss examples of issues and solutions they encountered when learning English through print. According to Swanwick (2016:27) studies have looked at how bilingual Deaf parents mediate between written language and Sign Language during book sharing activities with their young deaf children. Some of the methods used by Deaf mothers are said to be similar to those described in the pedagogical literature, such as using Sign Language to talk about language and specifically to give a definition, as well as interpret and explain individual words or written language conventions and features like rhyming or onomatopoeia. (also see Howerton-Fox & Falk, 2019:2). Swanwick (2016:27) agrees with Hoffmeister and Caldwell-Harris (2014) that Deaf parents utilise chaining to connect words to signs via fingerspelling. This is another approach for teaching deaf children to read that has been documented in the literature. Deaf parents utilise this method to teach their deaf child new English vocabulary and to emphasise the equivalency of meaning between the two languages.

According to Swanwick (2016:28), another approach used by Deaf parents is signing in English word order or adding English grammatical characteristics into a signed speech (such as a fingerspelt function word). As a teaching approach, this pedagogical research literature is also documented. Aside from linguistic practices, as stated above, Swanwick (2016:28) mentions that studies look at how signing Deaf parents arrange themselves, their child, and a book during story-reading activities, in addition to language behaviours. Deaf parents engage and maintain their children's attention by touching them and using non-verbal communication. They signal changes in activity, add characterisation or emphasis, and breathe life into narrative in books via signing grammar (Swanwick, 2016:28).

Calderon (2000:143) believes that in the past, parents have relied on specialists to educate their deaf children, frequently in opposition to their own wishes. They were made to feel inadequate or at odds with professionals, making it difficult for them to participate directly and actively in their children's educational programmes. Swanwick (2016:28) claims that through research, the value of parental experiences and views has been recognised as crucial to understanding biliteracy development and to underlie coaching and support strategies for hearing parents and teachers.

While growing up with Deaf parents can be a significant factor in the positive academic and reading performance of deaf children, the opposite can also be true. While it appears that having Sign Language available from birth may provide linguistic and cognitive benefits to deaf children, precautions should be taken in research on reading achievement among deaf learners with Deaf parents (Marschark & Lee, 2014:216). The first caveat is that Deaf parents should not be viewed as academic mentors or academic role models for their deaf children. Since 1974, at least half of deaf 18-year-olds have scored at or below the fourth-grade level on the reading comprehension subtest of the Stanford Achievement Test (Qi & Mitchell, 2012:14). Other investigations, according to Marschark and Lee (2014:217), have revealed that this scenario persists into adulthood. This suggests that many Deaf parents may not be appropriate academic role models for their deaf children and that they may be unable to help them with homework or read with or to them. This shows that, rather than Bilingualism, the use of Sign Language in the home is the key to deaf children of Deaf parents obtaining higher levels than deaf children of hearing parents. Hoffmeister and Caldwell-Harris (2014:239) agree that having Deaf parents does not always lead to excellent English reading competence in deaf children. They claim that, based on studies, the association between Sign Language and reading comprehension is so strong that it statistically eliminates the advantage of having Deaf parents. What is important for reading comprehension is not just having Deaf parents, but also having a good Sign Language input that can lead to good Sign Language abilities. Studies show that deaf children who sign, regardless of whether their parents are deaf or hearing, perform better in school than those who do not sign (Humphries et al., 2014:36). Early exposure to Sign Language for deaf learners is vital, according to Clark et al. (2020:1341), because of the visual aspect of Sign Language. Early usage of Sign Language can also enhance subsequent learning of a spoken language.

Another caution to be taken in relation to research on reading achievement among deaf children of Deaf parents, according to Marschark and Lee (2014:217), is that studies have found a link between early Sign Language fluency and deaf children's reading abilities, as well as a link between early spoken language and deaf children's reading abilities. Early access to language, rather than Sign Language or Bilingualism, appears to be a more plausible reason for deaf children of Deaf parents reading better than deaf children of hearing parents. Calderon (2000:141) claims that deaf children with better language and communication skills do better in school. Strong evidence also connects children’s social-emotional development or social competence and

academic outcomes. Deaf learners increased their reading scores, made better use of classroom teaching time, and solved social and academic difficulties more successfully when they improved their socio-emotional competence and language and communication abilities (Calderon, 2000:141). The researcher believes that all these can happen with early exposure to language and communication with parents in a language they prefer for their deaf child.

According to Knoors and Marshark (2014:45) family (parents) and friends contribute majorly to the development and learning of a child. A lot of what they provide comes through language. Knoors and Marshark (2014:46) go on to say that, while early language hurdles may appear to be an issue for hearing parents with deaf children, communication is more than just language, a deaf child will get access to the world of experience through vision and touch as well. According to Knoors and Marshark (2014:47), what was observed from Deaf parents of deaf children is the interaction that they have with their deaf children through natural behaviours. This interaction is referred to as intuitive parenting. Deaf parents will touch their deaf children more frequently in getting and maintaining the attention of the deaf child. This behaviour teaches the child to pay attention to certain things, which is a learned adaptation that is important because it makes the child more visually aware of their environment and offers more opportunity for incidental learning (Knoors & Marshark, 2014:47). According to Singleton and Morgan (2006:351), research demonstrates that through training hearing parents can learn to comprehend their deaf child's visual learning needs and use some of the visual engagement tactics utilised by Deaf parents with their own child.

What is evident is that the emotional and academic lives of deaf children can be enhanced by parents who are aware of their child’s needs and pursue intervention and education programmes and communication instruction for themselves and their child (Knoors & Marschark, 2014:52). Swanwick (2016:9) feels that it is difficult for deaf children with hearing parents who have no prior experience with deafness or Sign Language to learn Sign Language fluently. The explanation for this is that these children have a general sign language development delay and are having difficulty catching up. Swanwick (2016:9) continues to note that such a delay can be partly explained due to the restricted access to common dialogue and routine interactions, such as storytelling or parental comments around a shared activity. Hearing parents appear to find it difficult to learn Sign Language as a second language as adults. Despite the fact that many of these

families construct their own 'house signs,' these communication tactics fall short of the experience of having early access to a proficient language.

Hearing parents of deaf children, according to Knoors and Marschark (2012:293), must make an intentional choice for Bilingual Education. If parents choose Bilingual Education, they must dedicate themselves to learning a new language (Sign Language). Programmes in Sweden, Denmark, and France have indicated that hearing parents can and do learn native Sign Language. According to Mason and Ewoldt (1996:297), studies have shown that each gradation of an increase in gestures and signs by parents improves the deaf child's chances of improving academically and linguistically. Clearly, immediately providing a rich, fluent, and consistent language model, will be difficult for these parents. However, deaf children with parents that encourage early sign language development appear to have linguistic, social, and scholastic advantages in their early years (Knoors & Marschark, 2012:294). Early sign communication in the family and the capacity as an adolescent to understand the parents are two indicators of good mental health among deaf adolescents (Knoors & Marschark, 2012:294). The challenges that hearing families who have little or no experience with the deaf world face when a deaf child is born unexpectedly are real, thus developing a strong, respectful, and productive collaboration with families of deaf children is critical for a successful Bilingual-Bicultural programme.

According to Mahshie (1995:61), common elements in a well-designed bilingual environment appear to be: 1) trusting the parents' willingness and ability to make the necessary adjustments; 2) acknowledging the importance of hearing and deaf parents; and 3) providing parents with a positive orientation, as well as the support and training they require to make informed decisions. Calderon (2000:142) claims that children whose mothers demonstrate a more favourable adjustment to their deaf children have less impulsivity, more cognitive flexibility, and a better social understanding. Deaf children with parents who indicate more advancement in their children's communication and learning needs show higher reading achievements and parents who press their children for achievement have children with higher achievements (Calderon, 2000:142).

According to the researcher, parents of deaf children should be provided with the best unbiased advice as to the language and academic alternatives that they can follow for their child. Thereafter both deaf and hearing parents should receive continuous support on how they can create the best

environment for not only language learning but learning in general in order to narrow the growing gap of literacy and learning in deaf children.

3.3 Teachers' role and responsibility in Deaf Education

Teachers, like parents, play a critical role in a child's development, according to Bandura's social cognitive learning theory and Bronfenbrenner's bio-ecological theory. Knoors and Marschark (2014:13) state "in formal educational settings, teaching is, by definition, an important process in establishing learning". According to Knoors and Marschark (2014:14), the formal learning context in schools is thus largely shaped by teachers. They plan, develop, and manage the social environment, as well as the academic environment, which represent models of learning for learners. The knowledge that teachers have about learning certainly contributes to their teaching, but the knowledge teachers have of learning does not translate into knowledge of teaching. Teaching entails not just the transmission of subject matter, but also the skillful application of knowledge, the appropriate regulation of instructional and contextual factors, and the maintenance of teacher-learner relationships that support teaching and learning (Knoors & Marschark: 2014:14).

Finnegan (2013:18) feels that a teacher's feeling of self-efficacy is a critical component of good teaching. According to Garberoglio, Gobble, and Cawthon (2012:367), self-efficacy is a key component of social cognitive theory that allows for a more detailed examination of the relationship between individual beliefs and behaviour. According to Garberoglio et al. (2012:367), self-efficacy is the belief that someone has in their ability to successfully organise and implement a preferred course of action, as defined by Bandura. This belief or perception of ability, rather than real skill, is typically the most powerful predictor of later behaviour. Teacher self-efficacy, according to Finnegan (2013:18), influences the level of motivation a teacher has for their instructional behaviour. It is a teacher's belief that he or she can produce the necessary achievement in learner performance. According to Garberoglio et al. (2012:368), a teacher with high teacher self-efficacy is more open to new ideas and eager to try out and implement new ways to satisfy the needs of a learner. This type of teacher will have more excitement and talents in terms of teaching, planning, organising, and classroom management. They feel that they may have a good impact on a learner's learning, especially when dealing with more difficult learners. They are less critical of

their learners and are more committed to dealing with low-achieving learners (Garberoglio et al., 2012:368). Teachers with low self-esteem are less likely to persevere in the preparation and delivery of education, and they are more prone to retreat at the first hint of difficulties (Finnegan, 2013:18). The researcher believes that it is very important that teachers teaching at schools for deaf learners possess a high level of teacher self-efficacy as they play such a fundamental role in the development of the learners. The positive attitudes that teachers portray can in turn affect positive self-efficacy in deaf learners.

Knoors and Marschark (2014:15) maintain that teaching is fundamentally the support of learners in their acquisition of knowledge and that at the core of teaching is instruction, which aims to help learners to make sense of the content provided to them. Teaching is not only about transmitting information; it is also about guiding learners in their effort to solve problems and learn by themselves, including learning to learn. What learners take away from what they are taught is also mediated by their motivation to learn and by their ability to control their learning processes through metacognitive strategies. This means that teaching refers to all the actions of instruction that enhance learning (Knoors & Marschark, 2014:15).

In a research of factors affecting deaf learners' psychosocial adjustment, Polat (2003) discovered that the kind of education degree teachers hold can be favourably connected with the emotional and overall adjustment of learners (also see Ntinda et al., 2019:83). According to Polat (2003:334), teachers with a special degree in Deaf Education obtained higher ratings for their learners' emotional and general adjustment than their colleagues who did not have a special degree in Deaf Education. Teachers with special training in the field of deafness will be able to recognise the unique needs of deaf learners. This knowledge, as well as a better level of skill, can help the teacher be more effective. Issaka (2018:665) concurs that the teacher's knowledge of the content that needs to be taught may influence the deaf learners' academic achievements. Another reason why teachers with a particular degree in Deaf Instruction obtained more positive ratings, according to Polat (2003:334), is that they have a deeper understanding of deafness, deaf people, and the education of deaf learners, which is linked to more positive attitudes toward their learners. To effectively educate deaf learners and develop biliteracy in a bimodal setting, teachers need to possess a diverse set of specific teaching abilities and approaches for bridging the gap between sign and spoken/written languages (Swanwick, 2016:29).

Teachers from Denmark's and Sweden's most effective bilingual classrooms have worked hard to learn everything they can about the most recent studies in Sign Language grammar, Swedish grammar, and teaching a second language. They've learned more about linguistics and language acquisition, and they've used what they've learned to help their learners progress at a pace that is developmentally appropriate. (Mahshie, 1995:163). Issaka (2018:664) agrees that teachers, like all other professionals, require ongoing professional development through in-service training in order to maintain their skills and proficiency in the classroom. As a result, in-service training is an important part of the educational system. It is a necessary component of teacher professionalism in order to keep up with the pace of social and educational change and thus play a significant role in societal behaviour. Knoors and Marschark (2014:17) think that effective teaching includes having pedagogical knowledge, which is more than content knowledge alone. It also involves knowledge about the learners' challenges and about a method to support them in their learning.

Namukoa (2012:52) adds that the ability of a teacher to communicate in Sign Language has also been described as being unique to deaf learners and as one of the most ideal features of effective teaching. Deaf learners have been more engaged and imaginative in their learning as a result of a teacher's fluent use of Sign Language in communicating concepts to them (Namukoa, 2012:52). When a lesson is presented by a teacher with good Sign Language skills, experience and skills in teaching deaf learners, a teacher who can tailor instructional approaches to the learner's strengths and needs, deaf learners can learn as much from a lesson as their hearing counterparts (Wauters & De Klerk, 2014:248; Knoors & Marschark, 2014:224). A teacher's experience is a significant attribute in the classroom. According to Knoors and Marschark (2014:17) teachers with more experience are better able to react to events in the classroom because they have more automatised interpreting procedures. Experienced teachers are better able to accommodate greater complexity in the classroom compared to new teachers. They are also able to allocate more attention to specific individual differences among learners, allowing them to respond more effortlessly and effectively to challenges encountered by individual learners. Experienced teachers are thus able to be more effective in simultaneously leading and managing learners in the class (Knoors & Marschark, 2014:17).

Knoors and Marschark (2014:18) continue to state that the relationship between the teacher and the learner is equally vital. Learners with good relationships with their teachers tend to perform

academically well. They also obtain higher scores on achievement tests, they experience more positive attitudes toward school and they interact more in the classroom. According to Knoors and Marschark (2014:18), learner-centred teacher variables are significant predictors of a positive learner outcome. Teacher variables such as maintaining positive relationships with learners, being nondirective, showing empathy and warmth and encouraging thinking and learning are all variables that provide learners with a 'secure' basis from which to explore academically. A secure relationship with the teacher is especially important to learners who do not come from a very positive home environment (Knoors & Marschark, 2014:18). Learners, especially children from hearing parents who might not have very positive parent-child interaction, can benefit tremendously from a positive teacher-learner relationship. A positive teacher-learner relationship can be an encouraging aspect for their social and emotional development (Hermans et al., 2014:283). As important as instructional didactics are, so is the classroom climate in the form of the learners' relationship with peers and with the teacher. A positive relationship with the teacher influences learner motivation positively, which encourages more attention to instruction and results in better learning (Hermans et al., 2014:283).

Knoors and Marschark (2014:18) think that for a teacher to develop a more secure relationship with their learners, they can ensure the following: *Teachers must be well prepared for class.* Being well prepared allows the teacher more cognitive capacity to give attention to aspects of the classroom beyond content, for example, interpersonal functioning. *Teachers should be authentic.* By showing learners who they really are, assist teachers to support social-emotional bonding with the learners. *Teachers should have high expectations for their learners.* This contributes to positive teacher-learner relationships and is especially beneficial when coupled with an accurate understanding of learner competencies and individual differences. *Lastly, the teacher should have an autonomy supporting attitude, rather than being controlling.* Autonomy support can be established by being sensitive to each learner's agenda and by providing children with choices (Knoors & Marschark, 2014:18).

Magongwa (2010:495) argues that teachers who are not professionally trained in Deaf Education and have a lack of SASL proficiency are the main impediments to learning for deaf learners in South Africa. According to Ngobeni, Maimane and Rankhumise (2020:2) the majority of teachers in South Africa teach deaf learners without any knowledge of SASL. Magongwa (2010:495) state

that there is no regulation in South Africa that mandates teachers to be trained in deaf pedagogy and SASL before starting work in schools for deaf learners. Deaf learners are denied access to quality education if teachers teaching deaf learners are unable to utilise SASL fluently and are not suitably qualified (Magongwa, 2010:495). A major part of the difference in deaf learners' performance is assumed to be explained by the quality of instructions delivered by teachers and the qualifications of teachers. Teacher education is thus critical for improving educational quality, particularly in a complicated educational setting like Bilingual Deaf Education (Wauters & De Klerk, 2014:254). High levels of learner engagement result in higher levels of learner accomplishment when instruction is of high quality (Hermans et al., 2014:283).

The situation in Namibia is nearly identical to that in South Africa. Many teachers teaching at schools and units for deaf learners are hearing and until 2015, the Ministry of Education engaged teachers to teach at schools and units for deaf learners without any NSL or Deaf Education training. They were advised by school principals to attend NSL classes at the Namibian National Association for the Deaf (NNAD). These courses, however, bear no accreditation from the National Qualification Authority (NQA) and are only provided for teachers to acquire basic communication skills to teach the deaf learners (Bruwer & February, 2019:41). The University of Namibia has been offering NSL Education since 2011. This is offered as a major in the Faculty of Education for student teachers who wish to be primary school teachers at schools or units for deaf learners. As schools for deaf learners become more aware of this type of training being offered at the university, more schools are now requiring new teachers to have this type of qualification. Many of the teachers at schools for deaf learners however remain unqualified in NSL and Deaf Education. Within the whole of Namibia there, are only four qualified Deaf teachers, however, Deaf adults with training in early childhood development have been given the opportunity to apply at schools for deaf learners as assistant Deaf teachers (Bruwer & February, 2019:41).

According to Mahshie (1995:158), Deaf teachers are essential to the attainment of any Bilingual-Bicultural programme for deaf learners. Their ability to communicate visually, their awareness of and connection with deaf learners and their function as role models for deaf learners' culture and history cannot be overstated. Over 90% of deaf learners (those born to hearing parents) are unlikely to encounter native role models of their primary language in their own homes (Mahshie, 1995:159). Therefore, the presence of native role models in their primary language (Sign

Language) in the classroom becomes an even more crucial factor in linguistic and academic achievement. Parkin (2016:6) believes that SASL classes alone will not be enough in making SASL teachers competent in the language and Deaf culture in South Africa. This, she claims, is due to the fact that no one can be forced to participate in Deaf community events. As a result, it's critical to hire qualified Deaf people who can bring the Deaf community and culture into the classroom. According to Parkin (2016:6), this has been found to improve learners' and teachers' ability to learn Sign Language. Ms Motshega, South Africa's Minister of Basic Education at the time (2016), agrees with Parkin that a major impediment to the provision of high-quality Deaf Education in South Africa is a scarcity of qualified Deaf teachers.

According to O'Neill (2017:9), Deaf communities are concerned about the low signing ability of hearing teachers of deaf learners and have frequently charged education providers for deaf learners with not adhering to their concerns. O'Neill (2017:10) believe that a future for Sign Bilingualism will necessitate action in areas such as linguistic fluency in Sign Language, expanding Deaf teachers in schools for deaf learners, and improving social contact between hearing teachers and the Deaf community. O'Neill (2017:6) further states that Deaf teachers naturally have resources for teaching deaf learners which hearing teachers do not have. Deaf pedagogies are advocated, such as teaching deaf learners how to overcome difficulties through resilience and how to see themselves as normal in their development and not in need of treatment. Other natural Deaf teacher tactics include communication timing or strategies to create a comfortable environment for deaf learners, peer teaching, theatre and storytelling, or setting high standards. O'Neill (2017:6) and Singleton and Morgan (2006:354) believe that Sign Bilingualism includes spoken and Sign Language, fingerspelling, and pictorial resources. According to O'Neill (2017:6), hearing teachers can disregard Sign Language, focusing exclusively on the spoken language parts, thus developing a preference for spoken language, whereas Deaf teachers pay attention to all channels in the co-construction of meaning in classroom discourse. O'Neill (2017:6) continue to state that Deaf teachers will frequently switch from writing to signing to speaking and then back to writing. This allows the learner to answer in their preferred language and method, which is related to Translanguaging as a pedagogy. Hearing teachers can also carry out this co-construction to teach deaf learners, according to O'Neill (2017:7), but Deaf teachers are more likely to have the essential combination of linguistic abilities and capacity to increase learning enjoyment.

Singleton and Morgan (2006:356) indicate that effective teaching methods with deaf learners require competency in a natural Sign Language and the utilisation of linguistic and visual teaching strategies in the classroom. Some of these strategies are matching with the strategies used by Deaf parents with their deaf children. Deaf teachers who use visual and effective teaching strategies and who have high Sign Language proficiency, as well as personal experience as visual learners, will thus be better than a hearing teacher. Hearing teachers with a high degree of Sign Language proficiency can also master these visually oriented and evocative teaching practices (Singleton & Morgan, 2006:356). It's also worth noting that not all hearing teachers fail to utilise visually oriented procedures and that not all Deaf teachers use linguistically rich and engaging discourse techniques in their classrooms (Singleton & Morgan, 2006:357). According to (Hermans et al., 2014:283) results obtained from studies that show deaf learners to attain equal amounts of learning as their hearing peers, if taught by a skilled teacher for the deaf, were obtained, irrespective of the hearing status of the teacher.

What can be maintained from the above literature is the fundamental roles and responsibilities that teachers, Deaf or hearing, of deaf learners need to perform in order to be of significant assistance to the deaf child's development. The researcher believes that teachers, whether they are Deaf or hearing, equally carry these roles and responsibilities, because they are equally part of the deaf child's life and can equally in their individuality affect the child positively or negatively. What can be of assistance to the teachers to fulfil their jobs adequately, is to provide an education action plan or intervention programme for Deaf Education that can offer guidance to the teachers and that is in the best interest of the deaf child.

3.4 Biliteracy development in deaf learners

A secondary goal of this research was to create a biliteracy intervention programme for a Namibian school for deaf learners. A very simple definition of literacy, according to Ortiz and Ordonez-Jasis (2010:131), is the ability to read and write. This definition can be expanded to include the ability to comprehend and apply printed information in daily activities at home and in the community, the ability to think and reason within a specific society, and the ability to achieve one's goals and develop one's knowledge and potential through language advancement (Stewart & Clarke, 2003:4; Ortiz & Ordonez-Jasis, 2010:131; Alvi & Hammed, 2018:18). Kuntze et al. (2014:217) state that

“A literate person is able to think critically about content and how to best communicate with a given audience.” They continue to state that “one becomes literate by processing content thoughtfully, carefully and critically regardless of the language or modality”.

It is well established and depicted in the literature that deaf learners' early exposure to Sign Language is crucial to literacy development and achievement and this aligns with Bandura’s social cognitive theory and Bronfenbrenner's bio-ecological theory (Kuntze et al., 2014:204; Holzinger & Fellinger, 2014:104; Hoffmeister & Caldwell-Harris, 2014:239). In addition to early exposure to Sign Language, socialisation and how deaf parents introduce their children to the world of print also contribute to successful reading skills.

As stated earlier, Hoffmeister and Caldwell-Harris (2014:239) believe that Deaf parents provide their children with better support to facilitate English literacy. This assistance includes matching English print words with their sign equivalents, assisting with English polysemies, and teaching meaning sets and other methods for moving beyond simple translation equivalents. Hoffmeister and Caldwell-Harris (2014:239) further state that when children of Deaf parents struggle with English, Deaf parents draw on their own experiences and problems they had when they themselves struggled to learn English via print and so assist their children based on their own experiences. These practices that Deaf parents employ to promote their deaf children's reading development, according to Kuntze et al. (2014:204), are examples of methods that can be used in a classroom setting to teach deaf learners to read. Using Sign Language to bring meaning to print or combining Sign Language, fingerspelling, and print in interactions with deaf learners. This is a method that is seen not as language mixing, but as stated by Garcia and Cole (2014) as Translanguaging. Translanguaging is a pedagogical means of moving between Sign Language and Written English to bring about better understanding (O’Neill, 2017:7). Creating a rich communicative environment in which learners have access to a large number of people with whom they may communicate to, as well as the ability to debate a wide range of issues and relate to English print. Deaf children whose parents are Deaf are already exposed to such a language-rich environment, while more than 90% of deaf learners are not. Kuntze et al. (2014:204) think that the slow progress in reading development for many deaf learners can possibly be because of the limited opportunity and insufficient support systems for learning to read through visual means and not necessarily due to their partial understanding of the sounds of English.

Kuntze et al. (2014:205) suggested a paradigm to help people learn to read visually. They propose that an alternative means to reading comprehension skills must take into account developmental elements that influence a learner's preparedness to learn to read. The acquisition of Sign Language and the Development of Visual Engagement, Emergent Literacy, Social Mediation and English Print, Literacy and Deaf Culture and Media, and Literacy and Deaf Culture and Media are the five components of their concept.

3.4.1 The acquisition of Sign Language and the development of visual engagement

Language acquisition, according to Kuntze et al. (2014:208), is an unconscious process that occurs in the context of conversation. For a child to interact with parents, siblings, and peers, he or she must be exposed to language and given the opportunity to do so. For deaf children it is important to be exposed to a language environment where communication can flow easily as the development of eye contact or visual engagement are important aspects of not only Sign Language, but language development in general. Kuntze et al. (2014:209) continue to state that Deaf adults will usually practise various cultural engagement strategies to get deaf children's attention. This can include constantly tapping a child, wriggling their fingers in front of the child, or coming into the child's line of sight. According to Singleton and Morgan (2006:348), Deaf mothers seem to intuitively know how to grab their deaf child's attention through visual language and bodily behaviours. Should a child look at an object, a Deaf mother will wait until the child looks back at her before she will respond to the child, using Sign Language. To compensate for the child's developing use of triadic eye gaze coordination, a Deaf mother will employ shorter utterances. In using shorter utterances, the Deaf mother facilitates the higher memory demands on the child, which are related to the movement of visual attention between object and mother (Singleton & Morgan, 2006:348). According to Swanwick (2016:28), studies also observe the position and placement of Deaf parents when they sign stories to their child. How they position themselves, the child, and a book when signing stories. How they use touch and non-verbal communication to attract and retain attention, indicate shifts in the activity, add characterisation or emphasis, and give life to stories in books using signing grammar (Swanwick, 2016:28).

Kuntze et al. (2014:208) indicate that teachers need to be mindful when they communicate with deaf learners to use the appropriate gaze in groups and individual discussions, to gain and keep the

learners' attention and to support the learner's understanding of the dynamic discourse that occurs within the classroom (Singleton & Morgan, 2006:356). They also need to take cognisance of how they arrange seating positions in class, to ensure that everyone has full visual access. This can be done by arranging seats in a semi-circle (Kuntze et al., 2014:208). The teacher should be aware of the deaf learner's visual needs and should not sign before all learners are attentive and they should check on the status of the learners' visual attention on a frequent basis before beginning to sign (Singleton & Morgan, 2006:356). Through developing visual engagement learners can become more attentive to what is happening in their environment and learn how to direct their attention appropriately. Visual attention and engagement skills lead to more chances for communication, learning and the acquisition of language and literacy (Kuntze et al., 2014:208).

3.4.2 Emergent literacy

According to Morrison and Wilcox (2013:69), the emergent stage is from birth to kindergarten. During this pre-reading stage, children can come to realise that they are living within a literacy culture and start to show awareness of the environmental print around them and so become interested in reading and writing. This is the period that they will start to show understanding in basic concepts about reading, such as the direction of written language and names of the letters of the alphabet. They can also develop the ability to write letters during this stage (Morrison & Wilcox, 2013:69). Kuntze et al. (2014:210) maintain that what happens during these early years before children learn to read is an important factor in literacy development. Early exposure to language, books, print, and extended discourse is central for later literacy success. It is the responsibility of adults (parents) to expose children to a print-rich environment and various literacy events from an early age. An important component of emergent literacy for deaf children, according to Kuntze et al. (2014:210), is the possibility for optimal language growth. Language development through Sign Language aids in the quality of communication and comprehension required for literacy. Accessible language and interaction with adults, as well as extensive print exposure, can assist deaf children maintain their connection with books and therefore with Written English (Kuntze et al., 2014:210).

Swanwick (2016:27-28) discussed how Deaf parents mediate between written language and Sign Language with their young deaf children during book sharing activities. They utilise Sign

Language to debate language, explain definitions, and interpret single works or written language, among other approaches. Swanwick (2016:27) continues to argue that, as previously indicated, Deaf parents employ chaining to match words to signs using fingerspelling. An example of chaining is shown in the attached figure.

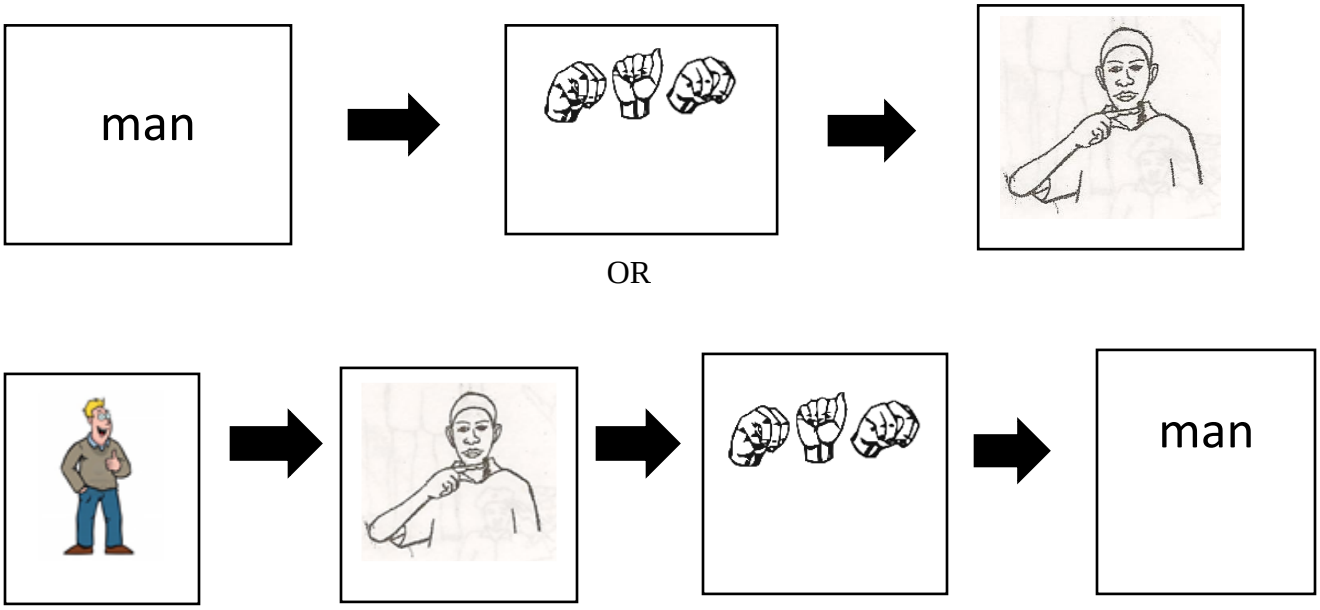


Figure 3.1: Examples of using chaining in teaching reading to a deaf learner

According to Swanwick (2016:28), evidence suggests that very young deaf children initially perceive fingerspelt words as a single integral shape and that by the age of five years, these deaf children begin to recognise that a fingerspelt letter and a written letter have an individual correspondence. Deaf learners' fingerspelling skills and English reading vocabulary have been found to have a good relationship. Incorporating fluent fingerspelling into classroom instruction is thus a promising strategy that could lead to enhanced reading ability (Lederberg, Schick & Spencer, 2012:9).

3.4.3 Social mediation and English print

Kuntze et al. (2014:211) believe that a good deal of social interaction is typically provided in an emergent-literacy classroom for deaf learners. This is where the teachers encourage communication during story reading sessions, by asking the learners open-ended questions, by answering the learners' questions and by encouraging the learners to talk about print in various

contexts. This social mediation can be used by a teacher in a range of daily tasks, and learners can be given just enough scaffolding to help them understand meaning as independently as possible (Kuntze et al., 2014:212). Social mediation can facilitate learners' understanding of a range of texts and with the necessary support, they gain a deeper understanding of topics they want to learn about. By exposing learners to more advanced ways of thinking and interpreting information help that they develop cognitive strategies more than they would if they were to do tasks on their own (Kuntze et al., 2014:212). Effective teacher-learner discourse techniques, according to Singleton and Morgan (2006:355), are crucial for the cooperative development of knowledge. Learners should be provided the opportunity to explore significant and relevant issues as active participants in the classroom discourse. The teacher is viewed as a guide who should respond to the learner's needs on a constant basis and scaffold the learner's participation in the social learning process (Singleton & Morgan, 2006:355)

Through social mediation, the teacher can also help the learners to make the connection with meaning through Written English. This can be done by pointing the learners' attention to print in the environment during conversations or lessons, giving meaning to printed material on the walls of the classroom. The availability of various writing materials (e.g., markers, crayons, and pencils) will also be beneficial if the teacher can persuade the learners to utilise them to communicate. By making print and writing resources available throughout the classroom, teachers and learners will have more opportunities to interact in both languages (Kuntze et al., 2014:212).

3.4.4 Literacy and Deaf Culture

Failure to incorporate Deaf Culture into Deaf Educational methods of teaching, according to Kuntze et al. (2014:214), can contribute in great part to the fact that deaf learners are at a considerable disadvantage while learning to read Written English, as the relationship between Deaf Culture and literacy development is important. According to Kuntze et al. (2014:214), culture is about passing on ancestral knowledge, language and social skills. It is not only growing through generations, but also dynamic, as knowledge, language, and ways of life evolve over time as each generation adapts to a changing world. Cultures differ in that they cater to the demands of a specific societal group. Deaf culture is primarily concerned with Deaf people's daily lives, particularly difficulties of communication, language and knowledge access (Kuntze et al., 2014:214). Deaf

Culture provides deaf learners with a visual language medium that aids in their growth. It's about a "visual manner of being" as much as it is about access to a visual language.

Since most deaf children are members of hearing families and all deaf children live in a hearing society whose members are not proficient in Sign Language, Singleton and Morgan (2006:364) believe that, in addition to linguistic competence, it is critical to begin developing concepts of Bilingualism and Biculturalism at a young age. The concept of Bilingualism and Biculturalism, according to Singleton and Morgan (2006:364), is fairly complex when examining a deaf individual's Sign Language and spoken language competency development, as well as their identification relationship with Deaf and hearing worlds or cultures. In the Deaf and hearing community, biculture is defined as the ability to travel easily between opposing and contradicting beliefs, lives, and activities, rather than being proficient in two cultures. Beliefs, lives and activities of hearing people and beliefs, lives and activities of Deaf people. It thus makes sense to involve Deaf adults and gain information from them on how to be Deaf in a hearing world and how to mediate between two languages and two cultures (Singleton & Morgan, 2006:364).

According to Kuntze et al. (2014:214), the fact that deaf children are visually oriented by nature has been humorously overlooked throughout the history of Deaf Education, which has focused on the lack of auditory access rather than the benefits of being visually oriented. It is vital to provide deaf children with examples of Sign Language and Deaf Culture not only for their literacy development, but also for their formation of a positive self-identity. Children will feel more confident if they have a positive self-identity. They will be able to freely convey their opinions, ideas, and worries if they have confidence (Kuntze et al., 2014:212; Moses, Golos & Holcomb, 2018:68). Deaf children of Deaf parents grow up in a home where visual cues, rather than aural cues, are used to communicate. The home of deaf parents is already a welcoming setting in which vision is the primary way of learning and growth. In such homes, the deaf child is immediately immersed in a milieu that promotes social, emotional, psychological, cognitive, and linguistic growth (Lane et al., 1996:27). When the family uses Sign Language, the child has visual access to information that is picked up incidentally on various topics. The child develops socially, as he or she is exposed to adults who operates normally as models for the child (Lane et al., 1996:27; Humphries et al., 2014:37; Moses et al., 2018:68). Including the child in the family discussions promotes healthy psychosocial and emotional functioning. Positive responses of the family

promote emotional development in the child and as Deaf parents accept their child and treat the deaf child as an extension of themselves, it promotes the healthy, psychological development in the child. High expectations from parents with proper nurturing and support promotes intellectual development (Lane et al., 1996:27; Humphries et al., 2014:37). The emphasis is on family engagement and direct language interaction with the deaf child. Hearing parents of a deaf child should include the child in family conversations. Hearing parents and hearing teachers of a deaf child should also understand that their efforts in communicating with the child will not be enough. It is also important that the child must socialise with other Deaf adults and children who have a common language and are a community like themselves (Humphries et al., 2014:37). Exposure to positive linguistic and cultural role models is crucial for deaf children, especially for deaf children of parents who are hearing.

3.4.5 Media

According to Kuntze et al. (2014:215), media, specifically recorded instructional content, can be a great way to introduce Deaf Culture and Sign Language to deaf children, particularly those who do not have access to Deaf adults or peers. Based on Bandura's social cognitive learning theory children copy the behaviour of role models and integrate new learning into existing situations that have already been internalised by them (Gray & MacBlain, 2012:95). When a child internalises entire patterns of behaviour, they act in new situations in the way they believe the adult or role model from whom they have copied their behaviour would act (Gray & MacBlain, 2012:95). Bandura proposes that children can learn through symbolic modelling. This is where the child engages in imitation and identification of fictional characters, such as storybook or fairy-tale characters (Gray & MacBlain, 2012:95). According to Kuntze et al. (2014:215), educational media, such as recordings created to assist deaf children become literate, can develop mutual respect for and a positive understanding of themselves and others in addition to developing and promoting reading skills (also see Moses et al., 2018:68). The researcher thinks that this is an excellent means to bring in Deaf role models and storytellers to the classroom, especially Deaf adults whom the learners are familiar with. The deaf learners will thus be exposed to first-language users that demonstrate fluent and grammatically correct Sign Language. Lessons and information on the history, accomplishments, and culture of Deaf people can also be taught to deaf learners through these recorded media. Deaf learners can then relate better to these lessons and in the

process not only become more fluent and literate, but also develop a positive self-identity and self-confidence.

3.5 Instruction strategies to teach reading to deaf learners

Reading, according to Wauters and De Klerk (2014:242), is a skill that must be learned or taught because it does not come naturally. The majority of the time, this skill is learned in school, thus teachers must be familiar with how to teach it. Teachers must be knowledgeable about instructional strategies to teach reading to deaf learners because the quality of education has a significant impact on the learners' academic success (Wauters & De Klerk, 2014:248). According to Kuntze et al. (2014:216), research on deaf children's literacy acquisition has been limited in many cases to theoretical frameworks that focus on how hearing children learn to read. Kyle (2015:2) concurs with the discussions that deaf learners typically display delays in most reading components. Reading is difficult for deaf learners, according to Kyle (2015:2), because of weaknesses in bottom-up abilities like phonological processing and syntactic knowledge, which are compounded by top-down deficits in vocabulary, world knowledge, and inferencing skills. Haptonstall-Nykaza and Schick (2007:172) are also of the opinion that the reason why deaf learners experience challenges to read is because of their limited access to the phonological system of spoken languages. They claim that this has an impact on deaf learners ' capacity to develop the link between phonology and the orthography found in most written systems. Kuntze et al. (2014:216) concur that lack of access to the phonology of spoken language is normally considered the problem and cause of reading challenges for deaf learners. Kuntze et al. (2014:216) continue to state that very often assumptions about deaf learners' reading ability that do not consider visually based strategies for literacy development and the limited opportunity of many deaf learners to access strategies for literacy development, mistakably foster skewed notions about deaf learners' abilities and needs.

For deaf learners acquiring their second language through print, Hoffmeister and Caldwell-Harris (2014:232) propose three stages of learning that express progressive, conceptual insight. They call their model a descriptive model because, in theory, it describes how deaf learners could learn English as a second language with solely print exposure. According to Hoffmeister and Caldwell-Harris (2014:231), the first stage of learning to read is when deaf learners acquire the skill to

identify familiar signs or phrases and map it to words and written phrases. They argue that deaf learners with good signing skills will when they start to interact with print, first acquire the print forms that correspond to simple and frequently used signs and phrases. As stated earlier, this is also a typical method that parents will use to map signs and words, first signing a word and then pointing to the printed word. Hoffmeister and Caldwell-Harris (2014:233) further note that the frequency of occurrence is crucial for successful mapping. The opportunity for sign-print pairings will not happen naturally in an environment. The deaf learners are thus dependent on adults to create the opportunity by frequently signing and pointing to printed words. How often adults provide print-sign pairings will be more significant than what is available in the environment. As learners are more exposed to print, they will start with more complex mappings as they challenge words or sentences that are not easily translatable to Sign Language (Hoffmeister & Caldwell-Harris, 2014:233).

The second stage, according to Hoffmeister and Caldwell-Harris (2014:233), is when learners begin to map signals to words and phrases, which includes idioms, metaphors, and multiple meanings. They do admit, however, that achieving success in the first step can be difficult because the most popular words in English also have the most distinctive polysemy structure. For example, learners can get confused by sentence structures like “take the bus to school” which can literally also mean “carry a toy bus to school”. Hoffmeister and Caldwell-Harris (2014:233) note, as previously stated, that Deaf parents serve as the finest reading mentors for their children during this era. They describe the parallels and differences between the two languages using their signing skills as well as their personal attempts to understand the unusual word combinations and challenging polysemy structure of English. Teachers that are able to explain the challenges of English grammar and polysemy in Sign Language might also be of assistance. Learners with poor first-language abilities, on the other hand, will find it more difficult to benefit from the intellectual debates that precede this form of explicit instruction (Hoffmeister & Caldwell-Harris, 2014:233).

Hoffmeister and Caldwell-Harris (2014:233) define the third stage as when learners use their Bilingualism to acquire more English through text in a bilingual, interactive learning approach. In this sense, a solid foundation in Sign Language can also be used as a bridge to becoming bilingual in both sign and a later acquired spoken language. According to Hoffmeister and Caldwell-Harris (2014:233), deaf learners will benefit from the comparison learning process if they have had

success with English print in the past. Learners will comprehend why many terms lack translation equivalents using a bilingual learning methodology. They will realise that single words, or even simple sign combinations, rarely map to single signs, but that phrases must be mapped to phrases. They can also recognise that the various meanings of polysemous English terms are not always related (Hoffmeister & Caldwell-Harris, 2014:234). They will effortlessly seek to comprehend print meaning by combining background information with Sign Language morphosyntactic and metalinguistic understanding, as well as narrative abilities learned through Sign Language storytelling. Deaf learners will be able to use reading to improve their English as a second language once they reach this stage (Hoffmeister & Caldwell-Harris, 2014:234).

In agreement with Hoffmeister and Caldwell-Harris (2014), Van Staden (2013:306) feels that a main impediment to deaf learners' reading progress is insufficient language development, rather than their incapacity to hear or speak English. This is closely linked to linguistic differences, according to Van Staden (2013:306), because many deaf learners have hearing parents. Reading development and underdeveloped phonological, syntactic, semantic, and discourse skills are further complicated by the inconsistency between deaf learners' insufficient spoken language system and the needs of reading a speech-based system. Van Staden (2013:305) looked into whether multi-sensory coding and scaffolding of reading comprehension strategies could help deaf learners improve their reading skills. The goal was to improve the deaf learners' Sign Language skills first, and then use those skills to improve their English literacy skills. This was accomplished by focusing on improving their sight word fluency as well as their ability to recognise and decode words, expanding their vocabulary and improving their reading comprehension skills, using a combination of multi-sensory instructional strategies and effective scaffolding. According to Van Staden (2013:314), using a combination of reading techniques was beneficial in that the learner's knowledge of word meaning improved as a result of designing interactive activities and employing specific strategies such as chaining. There were also a variety of visual, tactile, and kinaesthetic activities used. The results revealed a significant improvement in the learners' reading abilities.

According to Wauters and De Klerk (2014:252), learners will have a better probability of comprehending a reading text if they can master the decoding process, read fluently, know the words in a reading text, and use monitoring tactics. Schirmer and McGough (2005:83) review the literature on deaf learners' reading training and growth. They compare their findings to a National

Reading Panel evaluation of research literature on alphabetics (phonemic awareness and phonics training), fluency, comprehension (vocabulary instruction and text comprehension instruction), and computer technology and reading education (Schirmer & McGough, 2005:83). The researchers discovered that there was a lack of study on deaf readers' reading instructional interventions at the time. In agreement with Schirmer and McGough (2005), Wauters and De Klerk (2014:252) feel that reading instruction should emphasise phonemic awareness, alphabetic principles (phonics, letter knowledge, and phonological awareness), vocabulary, fluency, and comprehension methods. The literature will now be reviewed in order to acquire a better grasp of these factors in connection to deaf learners' reading instruction.

3.5.1 Phonemic awareness and alphabetic principle

Phonemic awareness, according to Wauters and De Klerk (2014:252), is the recognition that spoken words are made up of sounds (phonemes). The alphabetic principle, which states that letters (graphemes) correspond to sounds, is supported by phonemic awareness (phonemes). Andrews, Hamilton, Dunn and Clark (2016:510), like Kuntze et al. (2014), believe that deaf learners can build reading skills without using English auditory phonology by employing a visual language to bridge meaning to English text. Alternative frameworks involving visual language, such as Sign Language, printed texts, and visual processing, are discussed by Andrews et al. (2016:511). Visual learning, or learning that is processed through the eye, is the focus of these visual processing approaches, which can include visual engagement strategies such as visual attention, gaze behaviour, and visual joint attention, as well as the use of pictures, illustration, drawing, print, movies, and visual media. Visual language learning and mapping sign or fingerspelling to print is one of the concepts described by Andrews et al. (2016:513). All language learners must acquire pattern identification of the smallest unit of language, whether it is auditory sounds or units represented visually and tactilely through speechreading, articulatory feedback, visual phonics, cued speech, signs, fingerspelling, or written letters, according to this framework. In light of the foregoing, some auditory phonology researchers use visual phonology and sign orthography to relate meaning to print. According to Andrews et al. (2016:513), because visual phonology is the process utilised to learn to read, this strategy directly goes from print to meaning. The prosodic and supra-segmental structure of signs, signed sentences, fingerspelling, and letter orthographic patterns are all provided by the visual dissection.

Herrera-Fernández, Puente-Ferreras and Alvarado-Izquierdo (2014:2) argue that there is evidence that supports the importance of Sign Language in the functional organisation of language in the brain. According to them, Sign Language is important in the reading performance for deaf learners and Sign Language and fingerspelling contribute to improving literacy skills in pre-lingually deaf readers. They further state that through fingerspelling the internal representation of words is facilitated for the deaf reader, which serves as a support mechanism for the acquisition of reading skills. Herrera-Fernández et al. (2014:2) also support the reasoning that if deaf learners are taught by using strategies that are based on visualisation, they will do better in literacy tasks.

Petitito, Langdon, Stone, Andriole, Kartheiser and Cochran (2016:366), in agreement with Herrera-Fernández et al. (2014), claim that early reading success is due to the human brain's ability to segment, classify, and discern between linguistic patterns, allowing all languages to be segmented. They claim that this biological process includes the segmentation of Sign Language, and that early exposure to Sign Language encourages the deaf child's identification of silent segmental units in visual sign phonology, which helps with segmental decoding of print. Petitito et al. (2016:367) go on to say that phonology in hearing babies is made up of fragments of sound units from the spoken language that they are exposed to. This is conceivable, according to Petitito et al. (2016:367), because the brain has a proclivity towards segmenting and categorising the linguist stream. Deaf babies build an analogous phonological level of language organisation from fragments of visual units found in Sign Language as visual language around them, similar to hearing babies. Petitito et al. (2016:367) further state that hearing children, as young readers, segment and categorise the verbal stream into phonetic and syllabic units. These units are employed in tandem with their language skills to help children create links between phonological, orthographic, and semantic representations, which are critical for competent reading. With early exposure to Sign Language, deaf children segment and categorise the language stream as well, but into sign phonetic and sign syllabic units. These units are utilised to make connections between sign phonology, orthographic representation, and semantic representation, resulting to the development of adept readers (Petitito et al., 2016:367).

According to Puente, Alvarado and Herrera (2006:300), a reader must develop phonological awareness, making it possible for him or her to think about and handle the structural aspects of spoken language. Through this the reader would have acquired both specific and nonspecific

reading skills. Even though fingerspelling is a manual approach for encoding alphabetic rather than phonemic components of language, Puente et al. (2006:300) believe it can be used as a supplement to decoding in the reading process. In signing deaf children, this can help them develop phonemic awareness. Deaf learners may regard finger spelled words as lexical elements rather than a series of letters that indicate English orthography (Haptonstall-Nykaza & Schick, 2007:172). Thus, they will only begin to learn to link the handshapes of the manual letters to English graphemes at a later period. Puente et al. (2006:300) reason that if fingerspelling is considered a possible means of gaining access to the internal lexical coding system which can promote the identification of words leading to reading, deaf readers should develop metalinguistic skills that will allow them to become aware of the individual handshapes that make up finger spelled words. According to Puente et al. (2006:300), this will not only lead to early reading achievements, but also give deaf readers the advantage to related phonological representation.

McQuarrie and Parrila (2014:377) and Williams, Darcy and Newman (2015:56) further add that linguistic analysis of Sign Language indicates that signed languages display formal organisation at the same level found in spoken language. Sign Language expresses meaning through handshapes, movement, space and facial expressions. Sign Language phonology is composed of several phonological parameters, such as handshape, movement, location, palm orientation and facial expression. Advanced Sign Language signs contain all these parameters to represent an arbitrary meaning. Williams et al. (2015:56) add to this by stating that fingerspelling is different from Sign Language signs, as in fingerspelling handshapes are used to symbolise orthographic symbols in Sign Language. Fingerspelling is thus a successive handshape-by-handshape or letter-by-letter construction of words that have similar characteristics to written symbols. This makes fingerspelling a bridge between Sign Language and English in that it is a manual representation of the English alphabet, while at the same time representing signs in Sign Language. Fingerspelling thus provides an alphabetic representation for words that indirectly can be used as a phonological route. As such it might be an important window to understanding the connection between print and fingerspelling processing. This link from fingerspelling to spoken phonology can aid less-skilled deaf readers during reading and are well promoted as linking English and fingerspelling as a chaining process that is used to promote literacy among deaf learners (Williams et al., 2015:56).

3.5.2 Vocabulary

Luckner and Cooke (2010:38) state that a strong connection exists between vocabulary knowledge and reading comprehension. Reading words in text maps out these words onto the reader's receptive vocabulary. If the reader comes across words that are not in his or her vocabulary, the printed words are not understood. This then becomes a challenge for the reader to make sense of the passage. It is thus noted that reading comprehension is hindered if a reader does not know at least 95% of the words in the text (Luckner & Cooke, 2010:38; Wauters & De Klerk, 2014:251). In addition, vocabulary also contributes to comprehension as it represents a building block for higher order thinking skills. Readers with better knowledge of words will find it easier to interpret information and to incorporate this information into coherent thoughts (Luckner & Cooke, 2010:38). According to Wauters and De Klerk (2014:251), this is an indication of how important knowledge of vocabulary is in the reading process.

In line with Puente et al. (2006) and Andrews et al. (2016), Hermans, Knoors, Ormel and Verhoeven (2007:155) developed a developmental model that describes deaf learners' reading vocabulary acquisition in Bilingual Education programmes. Reading, according to Hermans et al. (2007:156), is a process that is reliant on the language that serves as the foundation for the writing system, especially during the early stages of acquisition. Hearing children learn that written and spoken words are made up of smaller pieces, such as letters and sounds, throughout these early stages. Phonological and orthographic awareness, according to Hermans et al. (2007:156), are key requirements for grasping the alphabetic principle, which states that individual letters map into individual sounds. Deaf children, like hearing children, must learn the alphabetic principle in order to learn new written words (Hermans et al., 2007:156; Petitito et al., 2016:367). However, their phonological awareness is severely impacted by their hearing loss (Hermans et al., 2007:156). Phonological and orthographic awareness, according to Hermans et al. (2007:156), are key requirements for grasping the alphabetic principle, which states that individual letters map into individual sounds. This is an example of a technique known as a Signed-based Reading Vocabulary Instructional Technique, which makes use of deaf learners' understanding of Sign Language when reading vocabulary (Hermans et al., 2007:156). Such reading instruction strategies have a substantial impact on how written words are stored in deaf learners' mental lexicons, as

well as how deaf learners may access and use words in reading and writing (Hermans et al., 2007:156).

The model developed by Hermans et al. (2007:158) addresses one component of learners' reading acquisition in Bilingual Education programmes, namely reading vocabulary learning. Deaf learners must construct a written vocabulary that has the relevant semantic, syntactic, morphological, and orthographic information for each of the words they acquire (Hermans et al., 2007:158). In agreement with Puente et al. (2006), Hermans et al. (2007:158) go on to say that creating a written vocabulary is an important component of learning to read because words are the building blocks of languages and he suggested a three-stage model for lexical development for deaf learners. The first stage is The Word Association Stage. This is where deaf learners make the connection between written words and Sign Language. At this stage of lexical development, the printed word's lexical entry is registered in the mental lexicon, which implies the orthographic information of the word is entered into the brain. The morphological, syntactic, and semantic specifications are still blank at this point, and Sign Language is required to comprehend the written word's meaning. The second stage is The Lemma Mediation Stage. The syntactic and semantic specifications of the first language lemma are replicated into the printed word's lexical representation at this stage. The written word and the conceptual framework are now inextricably linked. It is no longer necessary to use the Sign Language system to recognise written words, although it will make it easier to do so. The morphological specification of the written words is still blank at this point. The third stage is The Full Integration Stage. The lexical entry contains appropriate semantic, syntactic, and morphological specifications at this point. The written word is now inextricably linked to the mental framework. Even if there is still a link between lexical records in the Sign Language system and lexical entries in the written language system, the link will be insufficient to facilitate quick and automated lexical access (Hermans et al., 2007:162-163). Following is a model of lexical development for deaf learners as discussed above.

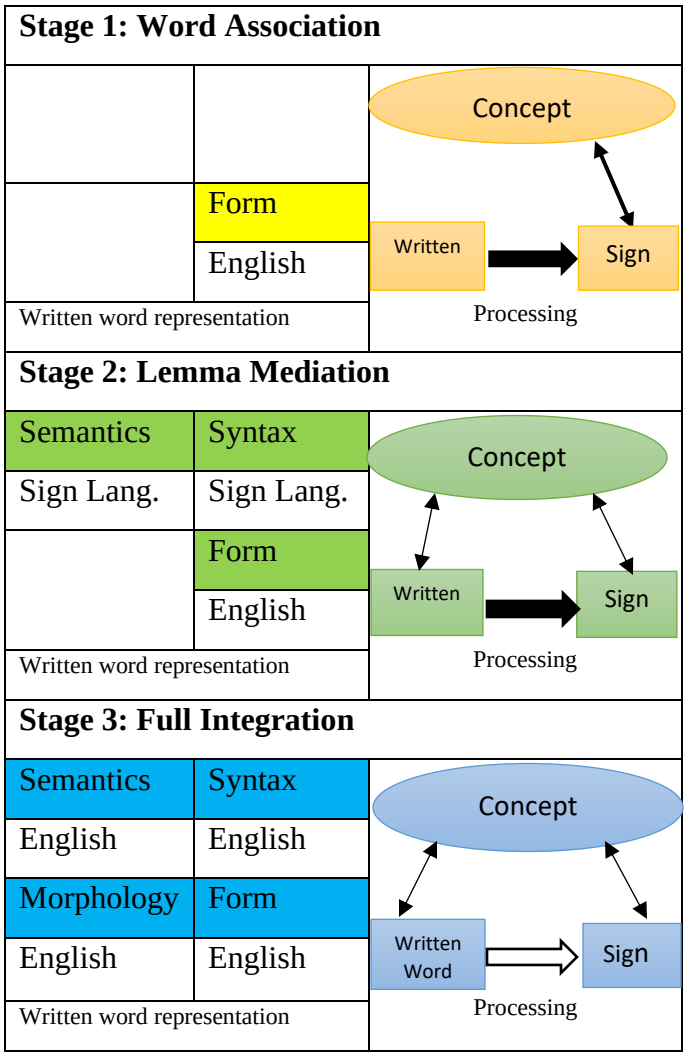


Figure 3.2: A model of lexical development for deaf learners as discussed (Hermans et al., 2007:162)

Deaf learners have learnt written words at different phases of development, according to Hermans et al. (2007:163). Some learned words may still be in the Word Association Stage, while others may be in the Lemma Mediation Stage, or possibly the Full Integration Stage. Many written words acquired by deaf learners in Bilingual Education programmes, however, will not reach the third and final stage of development. This means it won't progress through the second stage of lexical development. When reading, the Lemma Mediation Stage becomes the default condition of lexical processing (Hermans et al., 2007:162). The question is which technique should be used by teachers to assist deaf learners in reaching the third stage of lexical development.

As previously said, words or signs are the building blocks of language, and vocabulary acquisition is an important part of language development. Teachers should use sign-based chaining approaches

for teaching new reading vocabulary to deaf learners in Bilingual Education programmes, according to Hermans et al. (2007:167), because this strategy offers teachers with a valuable tool for teaching these linguistic building blocks. Hermans et al. (2007:167) go on to say that by using the sign-based chaining technique, regardless of whether intralingual or extralingual tactics are utilised in the classroom, deaf learners with limited access to spoken languages will naturally understand the meaning of new written words within their pre-existing language and conceptual framework. As a result, reading education programmes that take advantage of deaf learners' lexical knowledge in Sign Language will make learning new reading vocabulary easier (Hermans et al., 2007:167).

3.5.3 Fluency

Fluency, according to Luckner and Urbach (2011:230) and Wauters and De Klerk (2014:250), is a crucial skill in reading development that connects word reading and text comprehension. A commonly used definition of fluency, according to Luckner and Urbach (2011:230), emphasises Speed, which focuses on the number of words read in a given amount of time; Accuracy, which focuses on words, phrases, sentences, and connected text read correctly; and Expression, which focuses on correct phrasing, intonation, and punctuation. The favourable effect of fluency on reading comprehension, according to Luckner and Urbach (2011:230), is due to the involvement of working memory in integrating information throughout the task of text comprehension. The freshly processed data is stored in working memory in order to establish a link with the most recent input while also retaining the gist of the data for the creation of the overall representation of the text. According to Luckner and Urbach (2011:230), a fluent reader can also process information quickly, freeing up working memory resources and allowing them to focus on higher-level reading tasks such as word and phrase recognition, accessing past knowledge, analysing syntax, and checking for comprehension. Readers with fluency problems, in contrast to fluent readers, struggle to read and devote a large portion of their cognitive resources on lower-level abilities like decoding and word recognition, limiting the processing resources available to focus on meaning. According to Luckner and Urbach (2011:230), readers must first master lower-level skills before becoming skilled at reading related text accurately and efficiently.

Fluency is an important feature in teaching reading in the field of Deaf Education, according to Luckner and Urbach (2011:239), this has, however, not been properly explored. In their study to examine and summarise literature on reading fluency with deaf learners, they discovered that Easternbrooks and Huston (2008) created a Signed Reading Fluency Rubric for deaf learners to assess fluency when the output of reading is not spoken language but Sign Language (Luckner & Urbach, 2011:237; Wauters & De Klerk, 2014:251). The capacity of a signer to convert printed material into a fluent signed format with signed key parts is known as signed reading fluency. This will show that the reader has visualised the meaning of the text in his or her mind. Thus, there is a positive relationship between the learners' signed reading fluency and their comprehension of a reading text, indicating that fluency is important and independent of the output modality. It will have a beneficial impact on the learner's capacity to comprehend the written content if he or she can successfully represent what he or she reads in either a spoken language or Sign Language (Wauters & De Klerk, 2014:251). Other research, such as those presented by Luckner and Urbach (2011:237), suggest that one common component, repeated reading of words and sentences, has a favourable impact on reading fluency. According to previous studies with hearing learners, repeated reading of passages is an effective intervention for readers to improve word recognition, speed, accuracy, fluency, and comprehension. However, Luckner and Urbach (2011:237) feel that additional in-depth study with deaf learners is needed to assess the efficacy of repeated reading at various levels of letter, word, phrase, sentence, and passage for enhancing deaf learners' fluency and comprehension.

3.5.4 Text comprehension

Daly III, Neugebauer, Chafouleas and Skinner (2015:151) are of the opinion that the main reasons for reading are to gain knowledge, for personal enjoyment, and to facilitate the ability to learn independently. Learners who read quickly with comprehension are likely to choose to read more, and thus read more frequently. With more frequent reading they will become more skilled readers. On the other hand, learners who have trouble reading will avoid reading, because they do not comprehend what they read and will lack frequent exposure to a text, which will cause them to fall behind even further (Daly III et al., 2015:151). The goal of reading is to comprehend what is read. For a reader to achieve this goal, he or she needs to access prior knowledge on a topic being read and apply reading strategies to monitor his or her comprehension (Wauters & De Klerk, 2014:252;

Spencer & Marschark, 2010:108). Monitoring comprehension allows the reader to connect new information to previous knowledge, facilitating the text-based and knowledge-based inferential processing required for a complete understanding of the material (Wauters & De Klerk, 2014:253). Comprehension is the dynamic process of erecting meaning from text, and it is the primary goal of reading. Learners must be taught monitoring skills in order to attain text comprehension. Wauters and De Klerk (2014:253) believe that explicit comprehension can be accomplished through a direct explanation of steps in monitoring strategies; the teacher modelling monitoring strategies, the teacher assisting the learners in applying the strategies and the learners applying the strategies. Reading strategies that are commonly taught are prediction, which is based on the learner's prior knowledge; questioning, which is used to monitor understanding; and imagery, which creates a mental image, linking new information with prior knowledge and summarising (Wauters & De Klerk, 2014:253).

In line with Wauters and De Klerk (2014), Daly III et al. (2015:151) state that other areas that influence successful reading comprehension entail the reader, the activity or purpose for reading, the text and the context in which the reading and the learning occurs. According to Daly III et al. (2015:152) characteristics of a diverse reader are: *motivation, cognition, knowledge of the genre* and the *individual's existing knowledge.* Task characteristics that can influence a learner's ability to read and comprehend can be the purpose and choice and text-specific characteristics such as vocabulary and syntax. Relating to the above instructional strategies for reading, Daly III et al. (2015:152) are further of the opinion that in order for learners to comprehend what they read, they need the following skills:

(a) Foundation Reading Skills, which entails that the learners should have solid word decoding skills and knowledge of sight words;

(b) Word Knowledge, which requires that the learners should have strong vocabulary skills for comprehending text;

(c) Background Knowledge, which involves that the learners should have knowledge on subject-specific concepts or broader general knowledge to integrate what they read with what they already know;

(d) Cognitive Strategies, which will help learners to think and reflect on what they are or will be reading and so extract meaning from the text that they are reading;

(e) Reasoning Skills that allows the learners to think through the logic of the text and to use their analytical skills to extract meaning of the text;

(f) Motivation and Engagement that entail that learners who are motivated will persist in reading, even when the text is more challenging. They will engage in reading more frequently and they will more likely apply cognitive strategies to a reading task as they want to understand the text.

In support of Daly III et al. (2015), Spencer and Marschark (2010:108) state that intervention studies have shown that the following approaches have a positive impact on deaf learners' reading comprehension: clear instruction in comprehension strategies; teaching narrative structure or story grammar; and the use of modified directed-reading thinking activities, such as reading for specific purposes guided by questions. Spencer and Marschark (2010:108) continue to state the following approaches as also having a positive outcome on reading comprehension for deaf learners:

- using reading materials that are interesting to the learners and that are not simplified with selected vocabulary;
- providing specific activities to build vocabulary knowledge;
- using connected text instead of isolated sentences to provide instruction in syntax or grammar; and
- encouraging the use of mental imagery while reading and teaching the learners to look for keywords to assist in the comprehension of a text (Spencer & Marschark, 2010:108).

Benedict, Rivera, and Antia (2015:1) believe that learners who are inferior in reading, regardless of their hearing condition, will engage in reading activities more passively rather than actively, and they will be heavily reliant on others to monitor and handle comprehension issues. These learners may do so as a result of a lack of metacognitive understanding and skills (Benedict et al., 2015:3). Deaf readers have been shown to use prior knowledge to generate meaning from a text; but, when they fail to do so, they are unaware that their failure is due to a lack of background knowledge. Instead of using a metacognitive method, they will use a visual-matching strategy to refer to the text for clarification (Benedict et al., 2015:3; Spencer & Marschark, 2010:108). Deaf learners who lack adequate methods for reading text may benefit from instruction in metacognitive strategies. Accurate and automatic decoding is thought to help with comprehension. Readers who are component decoders have the metacognitive ability to extract meaning from text, therefore comprehension is based on decoding (Benedict et al., 2015:3). Skilled readers will link the

meaning of decoded words to the text's overall meaning. As a result, learning to read a text and learning to understand a text are mutually advantageous. According to Benedict et al. (2015:3), research has shown that teaching metacognitive skills can help deaf learners improve their reading comprehension. The goal of teaching metacognitive awareness to deaf learners is to give them the knowledge and control over their thinking that skilled readers have while reading. Benedict et al. (2015:3) further state that by not knowing the purpose of reading and experiencing a challenge in differentiating between understanding and misunderstanding fosters dependent reading behaviours in learners. This, according to Spencer and Marschark (2010:110), is in a large part due to the methods of teaching that are employed which fostered dependence instead of independence.

Benedict et al. (2015:3) conducted an intervention study to investigate the impact of a metacognitive method known as the Comprehension, Check, and Repair strategy (CC&R) on deaf learners' reading comprehension. Through the CC&R strategy, deaf learners are taught to use self-questioning techniques in monitoring their own comprehension. The strategy can be used as an integrated instructional approach in using content-area text for reading comprehension and metacognition (Benedict et al., 2015:3). Learners are taught to verify their own comprehension by pausing their reading at certain points to check their grasp of what they're reading and to see if they have any background information on what's being given in the text. If they don't understand something, they can ask themselves questions about it, thinking out loud about where they could find the answer, and then looking for it as they read (Benedict et al., 2015:3). The strategy must be demonstrated by the teacher and the steps must be made clear by using “think-alouds”. The teacher scaffolds the learners' learning by providing opportunities for practice and gradually removing prompts until the learners are able to utilise the method independently. Benedict et al. (2015:12) stipulate that the study showed a mastery of the metacognitive strategy in deaf learners as young as 9 and 10 years. This enables them to monitor their own understanding of reading as well as solving their own comprehension problems when they arose.

According to the literature reviewed above, the researcher agrees with Wauters and De Klerk (2014:252) that if deaf learners can master the decoding process through the areas of phonemic awareness and the alphabetic principle to master the reading of vocabulary, if they can read fluently, know the words in a reading text, and use monitoring strategies, they will have a better

chance to comprehend a reading text in the end. Within a biliteracy programme for deaf learners, special attention should thus be given to the methods of instruction of each of these factors.

3.6 Instructional strategies to teach writing to deaf learners

Marschark (1997:224) believes that there is evidence that shows parallel performance between deaf learners' reading and writing abilities (also see Malik & ud Din, 2019:2; Mayer & Trezek, 2019:1). The writing skills of deaf learners thus follow the same pattern as their reading skills. Characteristics of deaf learners' writing are the use of shorter, less structured variables and frequently incomplete sentences. In addition to lesser syntactic complexity, their writing also tends not to be grammatically correct and not interconnected, even in simple sentences (Marschark, 1997:221). The most noticeable characteristics are the omission of words. Deaf learners will use nouns and verbs more often, with fewer adverbs, conjunctions and auxiliary verbs. Marschark (1997:222) further states that these errors in the deaf learners' writing result from their failure to adopt a "discourse orientation". Many deaf individuals will see writing as an arduous, sentence-by-sentence task, rather than as an attempt at a spoken language. It is thus not surprising that with such a view of writing, deaf learners will also fail to use pronouns, definite and indefinite articles correctly, or to be concerned about inter-sentence matters of verb tense agreements (Marschark, 1997:222). A suggestion as to why deaf learners fail to make use of discourse structure in their writing is because they lack the rules of conversation that is normally acquired by monitoring ongoing verbal interactions (Marschark, 1997:222).

Despite their diverse backgrounds, most deaf learners, according to Albetini and Schley (2003:125), share a common trait in that they do not map the written form of a language onto a linguistic system that they already know and comprehend. Instead, they link a written system onto a limited range of linguistic comprehension. Albetini and Schley (2003:125) go on to say that a well-developed language system necessitates mastery of not only conversational and discourse rules, but also vocabulary and syntax rules. The essential norms of discourse in a signing community are knowing when to watch a conversation, how to get a turn in the topic, and how to get attention. Albetini and Schley (2003:125) maintain that a deaf learner needs to comprehend basic patterns of language and discourse in order to learn literacy in the classroom. The analysis of deaf learners' writing from previous years revealed certain prevalent errors in deaf learners'

writing. According to Albetini and Schley (2003:125), as well as Marschark (1997), sentences written by deaf learners are shorter than those written by hearing learners of the same age. Deaf learners tend to repeat words and phrases, use more articles and nouns, and use less adverbs and conjunctions than hearing learners. Inflectional morphological errors, such as verb tense agreement, are among the most common errors identified. Misuse of function words such as articles and prepositions, as well as irregularities in constituent structure such as the misuse of coordinating and subordinating conjunctions, are also noticed (Albetini & Schley, 2003:125; Malik & ud Din, 2019:3; Mayer & Trezek, 2019:5).

Reading and writing, according to Albetini and Schley (2003:123), support an information-based society. Readers and writers develop ideas and build meaning through their interactions with literature. Albetini and Schley (2003:124) go on to say that writing necessitates interaction between two cognitive spaces, the content space and the rhetorical space, from a psychological standpoint. They handle difficulties of belief and knowledge in the content area, and they tackle problems of organisation and style in the rhetorical space. The process of learning to write has also been classified as a socialisation process. Writing, like speaking, signing, and sketching, is a method of creating and potentially communicating meaning for deaf learners (Albetini & Schley, 2003:124).

When considering the rhetorical space from a social constructivist perspective, the internal conversation that occurs between the writer and the reader aids the writer in selecting content and identifying difficulties. The writing function becomes the demonstration and transmission of ideas, and the writer learns to communicate more clearly and effectively by focusing on content and procedure. Grammar and mechanics are not overlooked during this writing process, but are instead shifted to the final stages of the writing process (Albetini & Schley, 2003:124). Such process writing methods first direct the learners' attention to content and continuous conversation. The learners use writing to recall memories and keep track of their observations (also see Mayer & Trezek 2019:3). According to Albetini and Schley (2003:128), research on such process writing approaches shows that learners' writing quality improves and their grammatical complicity improves. The argument made in response to these findings was that learners' increased flexibility to experiment may have contributed to the improvement and increase in sentence complexity. When learners are concerned about writing being grammatically right, they are more likely to

choose simple constructs and terms that they are already familiar with (Albetini & Schley, 2003:128).

Writing as a process, according to Stewart and Kluwin (2001:87), is a recursive process with distinct sub-processes such as planning, translating, reviewing, and modifying, rather than a linear sequence of stages. Stewart and Kluwin (2001:89) suggest a modification of the approach that might be a helpful teaching technique to teach writing to deaf learners. The sub-processes for this modified approach entail prewriting, organising, writing, feedback and revising. This is in line with the Strategic and Interactive Writing Instruction (SIWI) approach as discussed by Wolbers et al. (2014:414). The SIWI approach includes explicit strategy training in writing, which teaches learners how to prepare, organise, write, and revise. Following is a description of Stewart and Kluwin's (2001) proposed sub-processes for teaching writing to deaf learners.

3.6.1 Prewriting

According to Stewart and Kluwin (2001:89), during the process of prewriting, a lot of discussions and self-expression should be involved. The reason is to clarify or stimulate ideas and to encourage the learners to write. To do this the teacher must present the learners with a stimulus for writing, which consists of a topic, an audience and a form. Part of the prewriting process is to define the limits and possibilities of the topic, to teach or clarify the particular form that the writing piece should have, and to define the audience for the writing and the style of writing that is appropriate for that audience. Stewart and Kluwin (2001:89) state that learners frequently experience a failure to write as they do not have a clear idea of the purpose of the writing task.

As part of the prewriting process, the teacher gets to define the topic and motivates the learners to write about the topic. The other part is to motivate learners by prompting their interest in the task. The teacher allows the learners to express their thoughts and to obtain feedback before the actual writing. Ideas are shared and clarification on the different ideas is obtained before writing. During this process, the teacher can also introduce vocabulary that the learners can later use in their writing (Stewart & Kluwin, 2001:89). Brokop and Persall (2010:7) state that some deaf learners find it challenging to express their ideas about a topic in the limited vocabulary that they know and that they can spell correctly (also see Mayer & Trezek, 2019:3). They concur with Steward and Kluwin (2001) to build on related vocabulary before the writing process. It was suggested that learners

start with target terms they already knew and then use that information to improve their general vocabulary knowledge. Teachers address the term's additional meaning, its relationship to other words or use in phrases, and its idiomatic and metaphorical use when teaching a target word. By studying multiple meanings, instances, uses, and associations of a target word, the instructor develops in-depth understanding of the target term (Brokop & Persall, 2010:7). According to Wolbers et al. (2014:414), employing an interactive writing instruction strategy to teach deaf learners allows them to use language switching during the brainstorming, planning, and problem-solving stages of the writing process. The teacher can use Sign Language 'think-aloud' to teach the deaf learners how to convert their ideas to Written English during this process. In encouraging the learners to convert thoughts into an English counterpart, the teacher might also teach features of Sign Language or English grammar. An example as suggested by Wolbers et al. (2014:414) is that the teacher presents the learners with a particular space in the classroom, which can be called the Sign Language holding zone. In this space, the teacher can present ideas in the form of pictures, drawings or video format. The teacher then discusses how to move concepts in the Sign Language holding zone to a separate Written English Zone. According to Wolbers et al. (2014:414) the goal is for deaf learners to gain a deeper metalinguistic awareness for each of the languages and to understand the similarities and contrasts between the grammars.

The researcher thinks that these methods of prewriting can also be adopted and used for junior primary deaf learners. Whenever the teacher presents the learners with a topic to write about, the topic should preferably be a topic that the learners had recent and personal experience on. The learners will then be more eager to discuss the topic. The teacher can further prompt creative thinking by presenting the learners with prompts or pictures that represent aspects of the topic. This is in line with social mediation and interactive writing instruction as discussed by Wolbers et al. (2014).

According to the researcher, the teacher can continue the lesson by asking the learners to draw a picture of their personal experiences on the selected topic and encourage the learners to make use of known vocabulary to label items in the pictures. Whenever possible they can even use phrases. The teacher can draw learners' attention to other printed materials on the walls of the classroom that can assist them with labelling items in their pictures. The learners can then be asked to present their pictures to the class and to sign about their pictures. The researcher thinks that by doing this

the learners can gain new ideas and learn new vocabulary from one another, as well as develop their expressive and receptive language skills. The teacher must show enthusiasm for the learners' work and acceptance of everything that was written, even if the learner might have presented below-average work. If the learner, however, presents exceptionally good work, the teacher must openly recognise this effort. According to Stewart and Clarke (2003:174), this will assist in boosting the deaf learners' confidence in their ability to write.

3.6.2 Organising

According to Stewart and Clarke (2003:174), writing has two distinct characteristics. The product, or the core message of a piece of literature, is the first feature. Vocabulary, syntax, and mechanics, which include punctuation, capitalisation, and legibility, are also included. The second aspect of writing is the act of accommodating features such as intent, audience, organisation, and style, which necessitates higher-level skills (Stewart and Clarke, 2003:174). Two types of activities that occur during the organisation process are discussed by Stewart and Kluwin (2001:89), the first being conceptual organisation. This involves recreating the logical, chronological, or natural structure of a concept or an event. Stewart and Clarke (2003:174) believe that for a writer to compose a written piece, he or she must first go through a series of thoughts and ideas, which include determining the text's structure, selecting appropriate vocabulary, constructing correct sentences in the proper order, and then organising them into paragraphs that convey the main points. During this process, the writer must also be attentive to spelling, punctuation and handwriting. The second activity that occurs during the organisation process, as discussed by Stewart and Kluwin (2001:89), is rhetorical organisation, which involves the form of the writing piece. This will depend on the instruction of the writing task, the number of paragraphs the writing piece has, and what should be written in each paragraph.

The researcher thinks that the organisation part of writing is where a written piece is given structure. This is sometimes the most difficult aspect of writing to a deaf learner. While it may have been simpler to convey their thoughts and ideas in a language that is more familiar to them, such as Sign Language, during the pre-writing phase, they now must put those concepts into a written framework that is distinct from Sign Language. Sign Language is a complicated visually portrayed language with grammatical elements that differ from those of English. Wolbers et al.

(2014:412) state that in Sign Language, a linear and sequential syntactic structure is not always used; instead, it is structured simultaneously and spatially. The concept of plurality, which is typically expressed in Sign Language through movement, location, and facial grammar, is one example. The letters 's' and 'es' are commonly appended to the ends of plurals in English. Another example is the use of facial grammar, body language and gestures in Sign Language to convey mood or feeling. A smile accompanied by the sign 'happy' can also convey joy or delight. According to Wolbers et al. (2014:413), language transfer can thus easily happen. The learner can easily express him or herself in Sign Language, but struggle with the written expression and so transfer Sign Language structures into the Written English expressions. Wolbers et al. (2014:414) thus state that the teacher may now use the opportunity to teach aspects of Sign Language or English grammar while guiding the learner to translate concepts into an English equivalence. They further state that through regular engagement in the Sign Language or English translation process, the deaf learner will become more effective to express their intended meaning in English. As the learner already knows what needs to be communicated, with the assistance of the teacher, he or she now only needs to organise their ideas into a sensible, grammatically correct English text (Wolbers et al., 2014:414).

According to the researcher, an important aspect at this level of writing for junior primary deaf learners is to guide them to the understanding that the manner in what they have previously expressed themselves (through various means) during the pre-writing phase can also be expressed in written text. This for example, can be done by putting what they labelled in their drawings into simple phrases or sentences. Next they can use the phrases or sentences that they might have written in a signed structure to demonstrate to them how to put it into grammatically correct English sentences and thus also expand their metalinguistic knowledge.

3.6.3 Writing

Stewart and Kluwin (2001:91) discuss two types of barriers to writing, namely physical and psychological barriers. The physical barrier entails the needed material, which not only include pen and paper, but also the notes and plans that should be made before writing. Psychological barriers refer to the lack of motivation to write what learners might experience. For example, a complete lack of interest in the topic or extreme concern with the grammatical correctness of

writing can destroy the will to write. A daunting and challenging psychological barrier for deaf learners can be limited practice in writing and the lack of confidence in English skills (Stewart & Kluwin, 2001:91).

To boost deaf learners' confidence in their writing abilities, Stewart and Clarke (2003:175-176) believe that the teacher must not only show genuine enthusiasm and acceptance for all written work produced by the learner, as previously stated, but also maintain a focus on the goal of a writing activity. This includes encouraging learners to express themselves by writing about anything that interests them in order to build and sustain a passion for writing. During this writing stage, it is suggested that you pay little or no attention to specific grammar or vocabulary tasks. According to Stewart and Clarke (2003:176), if a learner is not afraid of making mistakes, writing becomes an experimental process in which he or she can experiment with different tactics for telling a tale as well as different ways to play with words, phrases, and sentences. Routine also plays a significant influence in the learners' learning experiences (Stewart & Clarke, 2003:176). As a result, it's critical to compel learners to engage in regular free-writing tasks at regular intervals. This will provide learners with many opportunities to investigate and internalise concepts that have been taught automatically in skill, allowing them to have a better understanding of what they have learned. Finally, the teacher should strive to instil a sense of satisfaction in the deaf learners for their accomplishments by praising written pieces when merited (Stewart & Clarke, 2003:176).

Williams and Mayer (2015:648) conducted an interactive evaluation of the research literature on the development of writing skills in young deaf learners ages 3–8 years. They found a study on an Interactive Writing approach used in kindergarten and first-grade classes that has the potential to support deaf learners' early writing development. In the study, the lesson was started with the teacher and learners discussing their ideas for group composition. This often revolved around a storybook they have read. The text that will be written is planned by the teacher and the learners together. The teacher begins by writing on a writing tablet, and while she writes, she clarifies the process by 'thinking out loudly,' mirroring the cognitive processes of a mature writer. The teacher brings the learners' attention to letter-sound correspondences, common orthographic patterns and conventions of print. As she guides the course, she incorporates a unique interactive writing technique in which the teacher 'shares the writing pen'. The pen is passed around to different

learners, who are instructed to write specific letters or words, as well as capitalisation and punctuation. The teacher directs the learners' attention to specific areas of the writing process by sharing the pen. As the learners translate the message, the teacher draws the learners' attention to the use of specific spelling strategies, and then she scaffolds the learners' capacity to practise those cognitive tools as they are sharing the pen. At the end of the lesson, the text is read again as the teacher models to the learners how to revise and edit a text. Lastly, she discusses with the learners how they can use what was learned to support their writing (Williams & Mayer, 2015:648).

3.6.4 Feedback

The feedback that learners receive should be positive, constructive and ongoing (Stewart & Kluwin, 2001:91; Brokop & Persall, 2010:29). Learners who struggle with writing already know that they make a lot of mistakes in their writing, so the teacher does not have to point this out to them in detail. It is advisable for the teacher to only correct one or two errors in the writing piece that he or she requires for the learner to work on, for example, tenses (Stewart & Kluwin, 2001:91; Brokop & Persall, 2010:29). Mistakes that are the most destructive to the overall meaning of a written piece are conceptual or rhetorical errors. That is if an essential piece of the content is missing or has been inappropriately presented, the message will not be conveyed correctly, because the writing did not convey the intended meaning. The next level of mistakes is the structural errors, which entail the formal format of the written piece, for example, the formal structure of a letter (Stewart & Kluwin, 2001:91). Grammatical and mechanical mistakes are mistakes that are the most familiar to teachers of deaf learners. These mistakes are usually the least essential to the success of the written piece. If teachers overcorrect grammatical mistakes it can destroy a learner's willingness to compose or write (Stewart & Kluwin, 2001:91).

According to Wolbers, Dostal, and Bowers (2012:20), teaching writing has shifted away from grammar instruction and structural language programmes toward a more communicative writing approach. Instead of relying solely on writing for grammatical education, deaf learners can use a communicative writing technique to express themselves and communicate their ideas. Instead of being afraid of constant criticism, they can gain confidence and fluency in their expression, as well as learn more advanced language principles more readily in their writing (Wolbers et al., 2012:20).

It's important to remember that the grammar and syntax of Sign Language and English are extremely different when teaching writing to a deaf learner. According to Brokop and Persall (2010:22), teachers of deaf learners must have a thorough understanding of the structure of Sign Language in order to comprehend the difficulties that deaf learners confront when attempting to communicate using the English code. Learning Written English necessitates not just a comprehension of meaning, but also a comprehension of proper grammatical form. Direct instruction of grammar, on the other hand, has been found to improve a learner's capacity to communicate in Written English (Brokop & Persall, 2010:20). Learners who have trouble writing are hesitant to practice a skill that they find frustrating and difficult. Practice is necessary to build a talent in writing, just as it is for reading comprehension.

The researcher agrees with Stewart and Kluwin (2001:91) and Brokop and Persall (2010:29) that feedback should be constructive and ongoing. Teachers should provide feedback from the prewriting phase and gradually guide the deaf learners to reach the written lesson objectives. Learners build on what they know and can transfer abilities to their writing long after specific personal narrative training (Wolbers et al., 2012:31). The researcher believes that if constructive guidance and feedback are provided from the prewriting phase, the learners can use it fruitfully in their end writing products. If learners experience some success in writing at a very early age, they can develop the confidence to experiment more and more with writing.

3.6.5 Revision

> *Revision means making changes at any point in the writing process. It involves identifying discrepancies between intended and instantiated text, deciding what could or should be changed in the text and how to make the desired changes* (Fitzgerald, 1987:484).

According to Brokop and Persall (2010:20), through revision learners should pay attention to their intended concepts, refocus on their audience, and modify their written pieces to achieve continuity and flow. They should also determine where additional information is required to clarify their ideas. Through revising their work, they should refine their syntax as they expand, combine, rework, or eliminate phrases and sentences in order to communicate their ideas clearly (Brokop & Persall, 2010:20). According to Stewart and Kluwin (2001:88), revision should occur continuously

throughout the writing process and not merely at the end, as it involves reorganising and editing of the written piece.

Barkaoui (2007:85) elaborates that second-language writers often lack knowledge of the second-language linguistic rules and how texts work, to convey an intended meaning to achieve a particular goal in a specific context. Detecting and addressing problems in the second-language texts relate to proficiency and writing experience in the second language. The learners' revision practices also reflect their writing development. With more experience and practice, and as they become more familiar with the language itself, and readers' expectations for text content and structure, these learners are likely to improve in their ability to reflect on their own writing.

Wolbers (2008:257) and Alvi and Hameed (2018:20) confirm that deaf learners face significant obstacles in learning to write efficiently and fluently, as well as engaging in the writing revision process. Wolbers (2008) did a study that examined the effectiveness of writing instruction that is effective in developing lower and higher order writing skills. One idea was to use a methodology of teaching writing to deaf learners that included holistic writing activities and skill-based education that allowed deaf learners to gain knowledge of lower- and higher-order writing skills. Teaching writing abilities and procedures in the context of genuine writing activities for an authentic audience is one way to accomplish this. In her study, Wolbers (2008:264) tested three areas: writing, reading and revising or editing. She concluded her study by re-emphasising the importance of involving deaf learners as active participants in their writing training. She states that through regular cooperation and engagement in discourse about writing, learners use the thoughts, words, and actions of more knowledgeable others. To maintain their transformation into autonomous and component writers, Deaf learners should be provided the opportunity to build on their own collection of writing skills and internal representation of the English language (Wolbers, 2008:270).

The researcher concurs with Wolbers (2008:270) that learners, especially very young learners, should be active participants in each process of teaching them to write. They should have a real and personal connection with the written text that they are asked to present, and clarity on what is expected of them. Learners should be given guided practice opportunities in class on how to plan, organise, write and revise their work. The researcher also believes that through ample practice in this regard, deaf learners will slowly develop their confidence in writing English text.

3.7 Summary

The literature review from this chapter focused extensively on the literacy development in Deaf Education; that is, literacy development of the deaf child. It became evident that literacy development is challenging for deaf learners. However, it is not unobtainable. Parents and teachers of deaf children play a fundamental role in their development. Parents, deaf or hearing, should be given continuous support on how they can create the most suitable environment to support language learning and education. Parents, deaf or hearing, should however also not be discarded as uninformed, as they have first-hand information on what works well or not for their deaf child. Teachers of deaf learners face unique situations, even to the point of having classes in which no two learners have identical literacy needs. This explains the need for teachers of deaf learners that are not only highly qualified, motivated and skilled teachers, but also teachers who are fluent in Sign Language, have a high sense of self-efficacy and who have good teacher-learner relationships.

The need for a Bilingual-Bicultural programme in Namibia was made more evident when literature was reviewed regarding the biliteracy development in deaf learners. Instructional strategies to teach reading to deaf learners were studied. Attention was given to reading instruction that emphasises the areas of phonemic awareness, alphabetic principle (phonics, letter knowledge and phonological awareness), vocabulary, fluency and comprehension strategies. Literature was also reviewed on instructional strategies to teach writing to deaf learners. The emphasis here was on the following sub-processes of writing: prewriting, organising, writing, feedback and revising. The researcher believes that through carefully planned instructional strategies to teach reading and writing to deaf learners in Namibia, the Bilingual-Bicultural approach that is currently recommended can gain more positive results. This can lead to the biliteracy of the deaf child in Namibia. The next chapter will examine the research design and methodology that were selected to be used in this study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter presents the research design and methodology applied to investigate and gather data that could best answer the research questions of this study. The aims and objectives of the study and the nature of the research questions gave a clear indication of the type of research design to be followed. The research design and procedures that were engaged in collecting information concerning the implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia are based on a Bilingual-Biliterate programme evaluation study done in 2013. Bruwer (2013:40) designed a logic model grounded on sociolinguistic and socio-educational principles to evaluate the effectiveness of Bilingual and Biliterate education at a school for deaf learners. Bruwer (2013:94) identified factors that played a role in the implementation of a Bilingual-Bicultural programme. From these factors, the most fundamental factors are teacher qualification, concrete assessment, parental support, and involvement. The researcher believed that by closely studying the objectives of the logic model drawn up by Bruwer (2013) and by adapting and adopting it to bilingual teaching, deaf learners could obtain better literacy skills. Against this background, an intervention programme was developed that primarily focused on working with junior primary deaf learners and their teachers to bring about better biliteracy skills for deaf learners in Namibia. The main objective of the intervention programme was to find the best instructional practice to teach the Bilingual-Bicultural approach to deaf learners and to cater to the needs of all deaf learners in Namibia. A discussion will now follow on the methods and procedures that were employed in collecting information concerning this study. The ethical consideration, validity as well as the data analysis approaches used for making sense of the data will also form part of the discussion in this chapter.

4.2 Research design

This study adopted a programme evaluation within a multi-method research design. According to Johnson and Christensen (2014:54), multi-method research is a strength in educational investigations, where quantitative and qualitative methods complement each other. By combining the two methods with different strengths and weaknesses, it becomes less likely to miss important

information. According to Biesta (2012:147), multi-method research is based on the concept of 'triangulation,' which holds that the strength and validity of research conclusions can be improved by combining evidence from two or more approaches. Creswell (2014a:215) adds that the blending of data provides a stronger understanding of a research phenomenon or questions and by combining quantitative data and qualitative data, by assessing both the outcome of the study and the process of the study, an influential combination of information can be created (Creswell, 2014b:565).

In undertaking multi-method research, the researcher is guided by what Creswell (2014b:574) states as a multi-method design to embed quantitative data within a qualitative study. Quantitative and qualitative data can be collected simultaneously or sequentially using an embedded design, according to Creswell (2014b:574), but one kind of data must support the other form of data. The purpose of the secondary data collection is to assist or supplement the initial data gathering (Creswell, 2014b:574). The researcher collected qualitative data in the form of document analysis of prescribed ministerial documents and policies before an intervention programme. This is done to support a Bilingual-Bicultural literacy intervention programme and to assist with the design of a programme that is tailored for the participants of this study (Creswell, 2014b:574).

Quantitative data were collected using a one-group pre-test post-test design. According to Harris, Mc Gregor, Perencevich, Furuno, Zhu, Peterson and Finkelstein (2006:17), this is a commonly used research design. It involves a single group of participants who undergo pre-evaluation followed by an intervention. The same group is then again evaluated after the intervention (Harris et al., 2006:17; Leedy & Ormrod, 2016:203). This research design allowed all the junior primary learners (N=41) to benefit from the intervention programme and not withholding some learners from the benefits of the intervention programme (Creswell, 2014b:347). Through diagnostic measurements, all the junior primary learners (N=41) were involved to measure biliteracy skills and the possible effects of the intervention programme on their biliteracy skills.

To obtain a more holistic perspective on the study, the researcher proceeded to collect qualitative data in the form of observations guided by an observation sheet and by recording field notes and conducting unstructured interviews to inform the study further. In using the different approaches in the multi-method study, provision was made for different sorts of knowledge that have different

strengths and weaknesses, which make it less likely to miss something important (Johnson & Christensen, 2014:53).

The principal objective of the Bilingual-Bicultural literacy intervention programme gave way for programme evaluation. Patton (2002:10) states that programme evaluation entails the collection of information regarding activities, characteristics, and outcomes of programme effectiveness in a systematic manner. This is done to make judgements about a programme, to improve programme effectiveness, or to make informed decisions about the future of a programme. The WK Kellogg Foundation (2001:1) concurs that through effective programme evaluation relevant information can be gathered and used for continuous development and upgrading of programmes and are thus more than just collecting, analysing and providing data. The researcher undertook programme evaluation to be guided towards the best instructional approaches that catered for the needs of deaf learners in Namibia. The following is an outline of the research process that was undertaken for this study.

Programme Evaluation within Embedded Multi-Method Study

2016 March – August	Document analysis of prescribed Ministerial Documents and Policies.		
2016 August	Selection of the research population and sample.		
2016 September – November	Apply and receive permission to do the study.		
2017 February – October	Design Bilingual-Bicultural literacy intervention programme tailored for Namibian deaf learners, based on Document analysis of prescribed Ministerial Documents and Policies.		
2018 January	Requested and received informed consent forms from parents and teachers		
2018 February	Pre diagnostic test for NSL and Written English.	Quantitative Study	Programme Evaluation
2018 February – November	Implement Bilingual-Bicultural literacy intervention programme	Qualitative Study	
2018 February – November	Participant Observation		
2018 September – October	Non-participant Observation		
2018 October – November	Interviews with school management		
2018 October – November	Interviews with teachers		
2018 October – November	Document Analysis of continuous assessment record books, classroom registers and record sheets of learners' history and performance		
2018 October	Post diagnostic test for NSL and Written English	Quantitative Study	
2019 – 2020	Confirmation of Data Analysis and Interpretation		

Figure 3.3: Research procedure

4.3 Sampling procedure and participants

Stratified purposive sampling was done for the selection of the research participants. According to Omona (2013:180), to secure a stratified purposive sample, the sample frame is first divided into groups, then a purposeful sample is selected from each group. This sampling design can then enable a comparison between the groups. Different Grades (Grades 1-3) are described by Leedy and Ormrod (2016:179) as a stratified population, as it consists of different groups of distinctly different types of individuals. A purposive sample can then be selected from each group. Leedy and Ormrod (2016:179) state that in purposive sampling, participants are selected for a particular purpose. Participants are purposefully selected based on a principal phenomenon being explored in a study (Creswell & Clark, 2011:173). The principal phenomenon for this study is:

- Junior primary phase (Grade 1-3) of a school for deaf learners that proclaims the Bilingual-Bicultural philosophy.
- Learners with hearing impairment (deaf). No differentiation to the level of deafness.
- The use of NSL as a medium of instruction with Written English as a second language.

4.3.1 Research participants (Quantitative study)

All learners (N=41) from the junior primary phase (Grade 1-3) of the school for deaf learners were included in the quantitative part of the research. The population sample was small and all the learners fit into the principal phenomenon, (six classes of Grade 1-3; six learners in Grade 1A and seven learners in Grade 1B; eight learners in Grade 2A; and seven learners in Grade 2B; as well as six learners in Grade 3A and seven learners in Grade 3B. The ages of the learners ranged from 7 to 13 years. The ages of the learners are not specified to particular grades. All the learners (N=41) had hearing parents. The majority of the learners (78%) resided in the hostel and 22% were day scholars. From the total number of learners (N=41), 34% had attended CLaSH, a kindergarten and early intervention programme for deaf learners, while 66% had had no previous encounter with education or NSL. The diversity of the learners in the three grades justify a stratified population within a stratified purposive sample. The following is an outline of the sample of learner research participants in the quantitative part of the study.

Table 4.1: Outline of the learner research participants

3 Junior Primary Grades	
Grade 1A – 6 learners Grade 1B – 7 learners Learners Ages 7–13	**1A** – 4 boys – 2 girls 5 hostel – 1 home 1 EIP – 5 **no** EIP **1B** – 4 boys – 3 girls 5 hostel – 2 home 2 EIP – 5 **no** EIP EIP (Early Intervention Programme)
Grade 2A – 8 learners Grade 2B – 7 learners Learners Ages 8–13	**2A** – 4 boys – 4 girls 6 hostel – 2 home 5 EIP – 3 **no** EIP **2B** – 4 boys – 3 girls 4 hostel – 3 home 3 EIP – 4 **no** EIP EIP (Early Intervention Programme)
Grade 3A – 6 learners Grade 3B – 7 learners Learners Ages 9–13	**3A** – 1 boy – 5 girls 5 hostel – 1 home 2 EIP – 4 **no** EIP **3B** – 3 boys – 4 girls 7 hostel – 0 home 1 EIP – 6 **no** EIP EIP (Early Intervention Programme)

4.3.2 Research participants (Qualitative study)

The school management, which entailed the principal and head of department (HOD) for the junior primary phase, the teachers, and the hostel matrons formed part of the qualitative part of the research. All teachers (N=6) for the junior primary classes (Grades 1-3) were included in the study. The teachers were all female, of which five teachers were Otjiherero-speaking and one teacher was Oshiwambo-speaking. Their ages ranged between 19 and 54 years, with the majority (3) who had been in Deaf Education between 0–3 years; two teachers had been in Deaf Education between 4–6 years; and one teacher had been in Deaf Education between 16–20 years. Most of the teachers (4) had educational degrees; one teacher only had a Grade 12 certificate; and one teacher had a teachers' diploma. Half the teachers had no formal training in NSL and Deaf Education, and half had formal training. The following is an outline of the sample of the teacher research participants.

Table 4.2: Outline of teacher research participants

Teacher participants	Gender	Age (years)	Home Language	Qualifications	Formal training in NSL/Deaf Culture	Number of years in Deaf Education
Teacher A	Female	19–24	Otjiherero	Grade 12	No	0–3
Teacher B	Female	25–29	Otjiherero	Degree	Yes	4–6
Teacher C	Female	50–54	Oshiwambo	Diploma	No	16–20
Teacher D	Female	35–39	Otjiherero	Degree	Yes	0–3
Teacher E	Female	30–34	Otjiherero	Degree	Yes	0–3
Teacher F	Female	40–49	Otjiherero	Degree	No	4–6

The three hostel matrons who worked with the learners were all female, two of which were Otjiherero-speaking and one matron was Khoekhoegowab-speaking. Their ages ranged from between 45–54 years. Two had been working with the deaf learners for 20+ years and one matron had been working with the deaf learners between 16–20 years. All three matrons had a qualification of below Grade 10 and none of them had formal training in NSL and Deaf Education.

A discussion will now follow on the data collection procedures that were followed to obtain the information needed to answer the research questions and the evaluation questions that were drawn up for the programme evaluation.

4.4 Data collection procedure

In line with the research approach that entails a programme evaluation within a multi-method research design, the data collection in this study involved multiple processes. Under the multi-method research design, a discussion on quantitative and qualitative data collection will follow consecutively. This will be continued by a discussion in section 4.5 on the implementation and evaluation of a tailor-made Bilingual-Bicultural literacy intervention programme for Namibian deaf learners.

4.4.1 Quantitative data collection procedure

The exploration of an intervention programme provided the impetus for experimental research design in the form of a one-group, pre-test, post-test design to collect the quantitative data. This experimental research design was used to evaluate any benefits and effects that the intervention programme might have had on the language development and biliteracy skills of deaf learners (Leedy & Ormrod, 2016:204; Harris et al., 2006:16). Although a randomised control group is more commonly considered to have a higher level of credibility with regard to determining the effectiveness of an intervention programme (Harris et al., 2006:17), all the learners from the junior primary phase (N=41) were included in the study. By doing this, any ethical concerns regarding the selection of a randomised control group and withholding some learners from benefiting from the intervention programme were eliminated (Creswell, 2014b:347).

Pre-tests were conducted on the learners for NSL and Written English before the intervention programme started in the month of February for the academic year. The assessments were done in accordance with the prescribed procedures as outlined by the assessment instruments. For one full academic year (February–October), the intervention programme was presented to the learners of the junior primary phase (Grade 1–3) of the school. The same measuring instruments that were used for the pre-test at the beginning of the academic year, were again used as post-tests to assess the learners towards the end of the academic year in October.

4.4.1.1 Quantitative data collection instruments

Tailor-made diagnostic measuring instruments were developed for NSL and Written English assessment. According to Knoors and Marschark (2014:83), with a spoken language like English, several tests with good psychometric properties are available. Knoors and Marschark (2014:84) believe that most of these assessments are developed specifically for hearing individuals. As the spoken language proficiency of deaf learners differs from that of hearing learners, it makes these available tests inappropriate to assess the spoken language of deaf learners. According to Knoors and Marschark (2014:85), assessing Sign Language proficiency is even more challenging, because of the relative lack of information about various aspects of Sign Language development, compared to research done on spoken language acquisition. The differences in Sign Language proficiency across native and non-native signers, the lack of standardised assessment instruments, and the

availability of assessment instruments with good psychometric characteristics that are valid and reliable are contributing factors to the challenge of assessing Sign Language (Knoors & Marschark, 2014:85). In line with Knoors and Marschark (2014), Pizzo and Chilvers (2019:5) agree that very few tests are designed to assess deaf learners. This creates challenges to the validity of the tests, as test items may be based on auditory concepts, which are inaccessible to a deaf learner. It may also be impossible to translate these test items into a signed language (Pizzo & Chilvers, 2019:5). It was for these reasons that the researcher opted for tailor-made diagnostic instruments that were more suitable for the Namibian deaf child.

In both the NSL and Written English assessment instruments, careful consideration was taken which language areas to assess, what assessment methods to use, how the assessment should be done, and by whom the assessment should be done (Herman, 2015:200). Different instruments for each of the Grades (Grade 1, Grade 2 and Grade 3) were developed (see Addendum K, L, M, N, O and P). The syllabi and the Integrated Planning Manuals (IPMs that were designed as part of the intervention programme) for both language subjects were consulted. Based on the prescribed topics and language skills from the syllabi and IPMs, the language areas to assess were selected. In consultation with an expert from the Centre for Communication and Deaf Studies (CCDS), a deaf colleague, and the junior primary teachers at the school for deaf learners, a decision was made on the method and manner of the assessment. These colleagues also assisted in checking the instruments for content validity. The items in the assessment instruments were systematically developed and selected with care to incorporate manageable activities to more stimulating activities. This was done to reduce inherent biases and to establish validity (Pizzo & Chilvers, 2019:10). For the purpose of consistency, a decision was made that the tests should be administered by the researcher alone and that each learner should be individually assessed for each of the assessment instruments.

4.4.1.1.1 NSL assessment instruments

The NSL assessment instruments have five different testing components that focus on Picture Signing, Sign Identification, Arranging picture stories, Expression and Communication as well as Observation Comprehension. All the signed texts that were used in the NSL assessment were signed by a Deaf Namibian signer. This was recorded on a DVD and was played to the learners

during the assessment. The researcher was the sole administrator of the assessments and all responses from learners were calculated as raw scores. The following table shows the scores that could be obtained in each of the testing components. Thereafter, each of the testing components for the NSL assessment will be individually discussed.

Table 4.3: Assessment components for Namibian Sign Language

Assessment Component	Grade 1	Grade 2	Grade 3
Picture Signing	20	20	20
Sign Identification	20	20	20
Arranging Picture Stories.	20	20	20
Expression and Communication	20	20	20
Observation Comprehension	20	20	20
Total	**100**	**100**	**100**

- Picture Signing (see Addendums K, L and M)

This picture signing activity tests the learner's ability to sign vocabulary in NSL. The learner is presented with twenty (20) pictures that are based on the prescribed topics and signed vocabulary. He or she must sign what is in a picture within three counts. If he or she is not able to sign what is in a picture within the three counts, the assessor moves on to the next picture. The instructions for this activity are the same for all three grades.

- Sign Identification (see Addendums K, L and M)

This sign identification activity tests the learner's ability to identify signs. Twenty (20) pictures based on the prescribed topics and signed vocabulary are selected for each grade. The pictures on flashcards are placed randomly in front of the learner. The assessor gives a sign to the learner and he or she must point to the correct picture. The instructions for this activity are the same for all three grades.

- Arranging Pictures Stories (see Addendums K, L and M)

This activity tests the learner's ability to place pictures of a picture story in chronological order. The assessor hands out pictures of picture stories to the learner one story at a time. He or she must arrange the pictures in the correct order. The picture stories are on different levels and range from

manageable to more stimulating. The stories are different for each grade and within the level of each grade. The instructions for this activity are the same for all three grades.

- Expression and Communication (see Addendums K, L and M)

This expression and communication activity tests the learner's ability to communicate and express him- or herself in NSL. The assessor hands out pictures to the learner one at a time. He or she is given time to study the picture. Thereafter he or she is asked to sign what is happening in the picture. The pictures are different for each grade and within the level of each grade. The learner is assigned points based on a rubric. Grade 1 and 2 have the same rubric and Grade 3 has its rubric. The following are examples of the rubrics used to award marks to the learners.

Tick, if the following is present in the learner's story.				
Story 1				
Who	What	Where	How	
				Total
				___/4

Figure 4.1: Rubric for Grade 1 and 2

Tick if the following is present in the learner's story.	
Story 1	
Location/Placement	
Classifiers	
Facial Expression	
Verb movement	
Story line	
Total	____***/5***

Figure 4.2: Rubric for Grade 3

- Observation and Comprehension (see Addendums K, L and M)

This observation and comprehension activity tests the learner's ability to observe and comprehend a signed text. A recorded, signed story is played to the learner on a computer. The learner watches

the story for the first time; thereafter he or she is asked 10 questions in NSL based on the story. He or she can answer the questions in NSL. The assessor transcribes the learner's answers immediately and awards a score. Pictures on flashcards based on the story are placed in front of the learner. The story is played for a second time. The learner observes the story and places the events in the pictures in the correct order as the story is signed. The stories are different for each grade and within the level of each grade.

4.4.1.1.2 Written English assessment instruments

The Written English assessment has five different testing components that focus on Word Reading, Word Identification, Fingerspelling, Syntax Development, and Reading Comprehension. The researcher conducts the assessment herself and calculates all the responses as raw scores. The following table shows the scores that can be obtained in each of the testing components. Thereafter, each of the testing components for the Written English assessment will be discussed individually.

Table 4.4: Assessment components for Written English

Assessment Component	Grade 1	Grade 2	Grade 3
Word Reading	30	30	30
Word Identification	20	20	20
Fingerspelling	15	15	15
Syntax Development	15	15	15
Reading Comprehension	20	20	20
Total	**100**	**100**	**100**

- Word Reading (see Addendums N, O and P)

This word reading activity tests the learners' ability to read words. Thirty (30) words are randomly selected, based on the prescribed topics and vocabulary for each grade. The words are shown to the learner on flashcards, one word at a time. The learner must read each word within three counts. If he or she is not able to read a word within three counts, the assessor moves on to the next word. The learner can read the word silently and sign it back to the assessor. If he or she gives the correct sign for a word, the assessor knows that the correct reading of the word was done. It is also acceptable for the learner, whenever possible, to read the word aloud using his or her voice. The instructions for this activity are the same for all three grades.

- Word Identification (see Addendums N, O and P)

This word identification activity tests the learner's ability to observe a picture and from a group of words select the correct word for the picture. The assessor presents the learner with a handout of the activity and explains the activity to him or her. The words that are selected are based on the vocabulary of the prescribed topics for each grade. Instructions for this activity are the same for all three grades. The following is an example of this activity.

hut sun  gun fun	red bed  sad lad

Figure 4.3: Example of Word Identification activity

- Fingerspelling (see Addendums N, O and P)

This fingerspelling activity tests the learner's ability to spell words correctly using the finger alphabet. Fifteen (15) pictures on flashcards are shown to the learner, one picture at a time. The assessor signs to the learner what is in the picture. He or she must fingerspell the word that represents the sign and picture given by the assessor. The selected pictures are based on the vocabulary of the prescribed topics for each grade. The instructions for this activity are the same for all three grades.

- Syntax Development (see Addendums N, O and P)

This activity tests the learner's ability to develop grammatically correct sentences. The instruction for Grades 1 and 2 is the same, which is that the learner must identify the correct grammatical aspects and vocabulary for a related sentence. A picture is given to the learner with a sentence written underneath it. Within the sentences, the learner must choose the appropriate word/s that are correct for the sentence. The learner receives a handout of the activity and the assessor explains to the learner that he or she must look at the picture and circle the correct words in the sentence.

The instruction for Grade 3 is different. Grade 3 learners receive a handout of an activity that provides them with a list of phrases. Underneath the list of phrases are pictures. The assessor explains to the learner to look at a picture and make use of the list of phrases to build a sentence that fits the picture. The following are examples of each of the activities.

The girls	is are	good	brothers. friend.

Figure 4.4: Example of Syntax Development for Grades 1 and 2

The apples are	The boy	a book	under the table	a ball
on a chair	The man	The dog sleeps	in the bag	The woman
The girl	drinks coffee	sits	kicks	reads
	----------		----------	

Figure 4.5: Example of Syntax Development for Grade 3

- Reading Comprehension (see Addendums N, O and P)

This reading comprehension activity tests the learners' reading ability. The instructions are different for each of the grades. The Grade 1 learners receive two activity sheets for this assessment. On the first activity sheet, they have a picture. Underneath the picture, some sentences are either correct or incorrect facts about the picture. The learner must read each sentence and next to the sentence indicate with a √ or **X** if the fact relating to the picture is correct or incorrect. In the second activity, the learner must match the correct sentence with the correct picture.

The Grade 2 learners also receive two activity sheets for this assessment. On the first activity sheet, the learners are given a list of nouns and verbs with pictures underneath. The assessor explains to the learner to look at the picture and to select from the list of words the appropriate noun and verb

to build a phrase that matches the picture. The activity thus requires of the learner to read and identify the correct noun or verb. In the second activity, the learner must also match the correct sentence with the correct picture. This is the same type of activity that is given to Grade 1 learners.

The Grade 3 learners receive four reading cards with a picture, a reading paragraph, and five questions on it. The learner must read the reading cards one at a time. The assessor asks the learner the questions on the card in NSL. He or she can answer in English, in NSL, or simply point to the answer on the reading card. The notion for this is for the learner to be able to read and comprehend by identifying answers in a particular text.

4.4.2 Qualitative data collection procedure

A case study research approach was adopted for the collection of qualitative data that allowed the researcher to give focus on one school and one learning phase (junior primary phase). Niewenhuis (2007:75) describes a case study as striving towards a holistic comprehension of how participants in a particular situation interact and relate with each other, making sense of the phenomenon under study. An advantage of a case study is the use of multiple sources and techniques to gather data and obtain a deeper understanding of the dynamics of the situation (Niewenhuis, 2007:75). The study pursued qualitative data gathering in the form of document analysis, observation, and interviews. It assisted the researcher to discover the challenges that the school experienced in the implementation of a Bilingual-Bicultural literacy programme and the roles of the teachers and the parents in the support of biliteracy for deaf learners. A discussion on the qualitative data collection instruments will now follow.

4.4.2.1 Qualitative data collection instruments

The nature of this study permitted the researcher to use numerous sources and techniques to gather data to obtain a deeper understanding of the situation. The instruments and techniques that were used to collect data for the qualitative part of the study were document analysis, observation sheets with additional field notes, and interview guides. All instruments were tailored to obtain maximum information that could meet the research objectives and that can provide the appropriate answers to the programme evaluation questions.

4.4.2.1.1 Document analysis

When using documents as a data-gathering approach, according to Nieuwenhuis (2007:82), one concentrates on all sorts of written communication that have the potential to provide light on the phenomenon under investigation. Before the intervention programme, March–August 2016, the researcher collected and studied data from various prescribed ministerial documents and policies. These documents entailed the Basic School Curriculum, the Inclusive Education policy, the draft Curriculum Framework for Inclusive Education (supporting document for Inclusive Education Policy), the Integrated Planning Manuals for Grades 1–3 as well as the NSL and Written English Syllabi that are drawn up by the National Institute for Educational Development (NIED) under the Ministry of Education Arts and Culture, and the National Promotion Policy Guide for junior and senior primary school phases. The documents were analysed to obtain information on any recommendation from the Ministry of Education Arts and Culture in relation to the education of the deaf child. To understand what is already prescribed by the Ministry of Education Arts and Culture concerning the application of a Bilingual-Bicultural approach to teaching deaf learners. Some relevant information that were obtained were: The Bilingual-Bicultural approach is recommended to teach deaf learners; NSL is considered the mother-tongue and should be used as language of instruction with the written form of English; the Basic School Curriculum provide for both NSL and Written English to be taught as subjects; the language skills and subject content that were provided in the Integrated Planning Manuals (IPMs) for Grades 1–3 were relatively different from what was provided in the NSL and Written English Syllabi. Information obtained from the above mentioned documents were used as a support mechanism for developing the Bilingual-Bicultural literacy intervention programme that was personalised for the participants of the intervention programme. These documents provided the basis on which the intervention programme was designed and more detailed discussion in respect of these documents will follow throughout the report. During October and November 2018, other documents such as continuous assessment record books, classroom registers, and record sheets of learners' history and performance were also studied and analysed to obtain better insight to the learner participants, their particular backgrounds and performances as part of data collection for presentation and discussions.

4.4.2.1.2 Observations

Qualitative observation comprises the observation of all relevant phenomena and the recording of extensive field notes (Johnson & Christensen, 2014:238). During the intervention programme, February–October 2018, the researcher conducted participant observation. Participant observation, according to Nieuwenhuis (2007:85), occurs when the researcher is involved in the research process and collaborates with the participants in the scenario to develop intervention strategies. The researcher then gets an opportunity to see experiences from the views of the participants (Creswell, 2014b:237). During the period of the intervention programme for this research, the researcher visited the school every week for at least 1–2 hours. During this time, the researcher worked extensively with the teachers teaching on the intervention programme at times, or with the hostel matrons and learners at the hostel after school learning activities. Throughout this time, the researcher recorded fieldnotes in a record book of what was observed and information that was gained from interactions with the teachers and the hostel matrons. Formal interviews could not be arranged with the hostel matrons, as their duty schedule did not allow for an appropriate time. Information was, however, obtained from the hostel matrons through informal discussions during the researcher's participant observations.

The researcher shared her observations and conclusions with the teachers and hostel matrons to confirm whether what was concluded from the observations are correct. During the second half of the period of intervention, September to October 2018, the researcher also conducted nonparticipant observation. A nonparticipant observer watches the phenomenon under study from a distance and record notes without becoming involved in the activities of the participants (Creswell, 2014b:237). Permission was requested from the teachers to observe the lessons that they taught. During this time, the researcher was a nonparticipant observer and use an observation sheet (see Addendum H) to record information. Lessons were only observed when the teacher felt comfortable with the researcher in her class. Teachers that gave their permission to be visited, were visited two times (for one NSL lesson and one Written English lesson). The researcher observed 10 lessons in total. After each lesson observation, the researcher discussed with the teacher what she observed and showed the teacher the observation sheet that was filled in and the additional notes that were made on the observation sheet. By doing this the researcher verified if her understanding of what was observed was correct (Nieuwenhuis, 2007:86).

4.4.2.1.3 Interviews

The goal of qualitative data collection through interviews is to gain rich descriptive data that will aid the researcher in understanding the participants' perspectives on the topic being examined (Nieuwenhuis, 2007:87). Towards the end of the intervention programme, October–November 2018, unstructured interviews that entailed open-ended questions were conducted with the principal, HOD, and teachers of the junior primary phase of the school for deaf learners. Creswell (2014a:190) reasons that unstructured interviews are used to elicit views and opinions from the interviewee. It tends to take the form of a conversation with the objective that the researcher gets an insight into the participant's views, ideas, beliefs, and attitudes about the phenomena that are being studied (Nieuwenhuis, 2007:87). Two different interview guides were drawn up (see Addendums I & J). One interview guide was used to interview the school management (principal and HOD) and one interview guide was used to interview the teachers (N=6). The questions in the interview guides were carefully selected to ensure that significant information was elicited in obtaining the views and ideas of the participants on the Bilingual-Bicultural literacy programme and thus to validate the information obtained. Appointments were made with the participants to be interviewed at a time that best accommodated them. The interviews were conducted in-person on an individual basis with each participant. Permission was obtained from the participants to do voice recording during the interviews. The recordings were transcribed immediately after each interview session and the transcriptions were shared with the participants to confirm that it reflected what they stated during the interviews.

4.5 The Bilingual-Bicultural literacy intervention programme

This study provides the implementation of a Bilingual-Bicultural literacy intervention programme for deaf learners. The central aim of the intervention programme was to find the best instructional practice to teach the Bilingual-Bicultural approach that catered to the needs of deaf learners in Namibia. The intervention programme entailed the following:

Figure 4.6: Outline of the intervention programme

4.5.1 Adapted Integrated Planning Manuals

The teachers were presented with new adapted Integrated Planning Manuals (IPMs) for each Grade (1, 2 & 3), for the whole year that was particularly written for the NSL and Written English subjects. The newly adapted IPMs for NSL entail the following language skills:

- Observation and Comprehension;
- Expression and Communication;
- Linguistics;
- Deaf culture and Literature.

These were different from the language skills that were originally prescribed in the previous IPMs for the first language subjects, which were:

- Listening and responding;
- Reading;
- Writing;
- Language Structure.

For each week, 10 new signs were prescribed for each of the grades. These signs were based on the theme and topic for that particular week. The newly adapted IPMs for Written English entail the following language skills:

- Word Reading and Fingerspelling;
- Reading;
- Writing;

- Language Structure, Grammar and Language Use.

These were also different from the language skills that were originally prescribed in the previous IMPs for the second language subjects, which were:

- Listening,
- Speaking and Understanding;
- Reading;
- Writing.

For each week, 10 new vocabulary and sight words were prescribed for each of the grades. The vocabulary was based on the 10 signs that were prescribed in the NSL weekly lessons. The IPMs form the basis of schemes of work that are prepared by teachers and thus form an integral part of the lesson preparation and presentation.

The following is an example of a layout of a suggested plan from the new adapted IPMs. The first line gives us the theme, topic, and topic of integration. The week, the grade, and the date are written on the next line. The rest of the plan is laid out where NSL is on the one side and Written English is on the other side of the page. In the middle of the page is the topic of integration, the new signs and English vocabulary for the week, as well as the Sight words for the week. The newly adapted IPMs were only done for the NSL and Written English subjects.

Theme: The Social Environment

Topic: Families and Communities

Topic of Integration: My Family

Week 6

Grade 1

Date: _____

Blue Colour

Namibian Sign Language

Observation and Comprehension
Observe story 4/1 about Kahdila and Martha. Discuss and answer questions about the story.

Expression and Communication
Learners sign about their family. Use new vocabulary in their stories. Teacher sign picture story and ask learners to predict the ending.

Linguistics
Learners apply possessive pronoun. Pointing to an object, asking whose. Or pointing to an item and asking with correct facial expression, yours, his, hers.

Deaf Culture and Literature
Assess which hand for the learners is dominant and which is non-dominant. Teacher put a string around dominant hand. Allow learners to practice.

My Family

New signs / vocab
mother, father, brother, sister, baby, grandfather, grandmother, man, woman, love

Sight words
you, we, me, my, here

Red Colour

Written English

Word Reading and Finger Spelling
Read and match pictures with words, Fingerspell words on flashcards, Build the words using enlarged alphabet letters. Write the words with finger in a tray of flour after building it.

Reading
Read word on flashcards out loud or silently. Use drum to read word in syllables. Motivate learners to say words out loud. Identify known words in short sentences. Teacher explain sight words to the learners.

Writing
Colour pictures, cut out pictures with the help of the teacher, trace words, scribble and draw patterns. Practice making's, t, p, n' letters. Write short sentences of 3 words. Use capital letters and full stops where appropriate.

Lang Struc, Grammar and Lang Use
Use pronouns by answering questions, whose? Introduce possessive pronouns

Figure 4.7: Example of an adapted Integration Planning Manual

4.5.2 Lesson plans with teaching and learning materials

For each of the Grades (1, 2 & 3), the teachers were presented with weekly lesson plans for the whole academic year together with the teaching and learning materials that accommodate each lesson. The weekly lesson plans entail prepared lessons for each of the language skills (NSL and Written English). Additional teaching and learning material in the form of worksheets, ideas for posters that the teacher could make him or herself, as well as short written tutorials that explain certain grammatical lessons to the teacher in NSL and Written English were added to the lessons that were prepared. To sustain the NSL and Written English lessons, a series of short stories based on two deaf characters were prepared. These stories are referred to as the Kahdila and Martha stories. In addition to the prepared lessons the teachers received the following on a weekly basis:

- A printed story of the Kahdila and Martha stories.
- Flashcards of the 10 words.
- Flashcards of pictures of the 10 signs.
- A picture dictionary of the words and signs for the week.

4.5.3 Training for teachers

Lastly, the teachers were presented with various training sessions. The teachers' training teachers was provided in the form of individual and group training sessions. Three group training sessions were offered to the teachers. Information was provided within the weekly lesson plans with clear explanations and guidelines on specific topics that needed to be taught. Individual training was provided to teachers that still needed assistance with some aspects of the programme, after that. Teambuilding activities were encouraged to motivate teachers to use their own creative methods to teach their learners. The following is an outline of the overall training that was provided (see Figure 15).

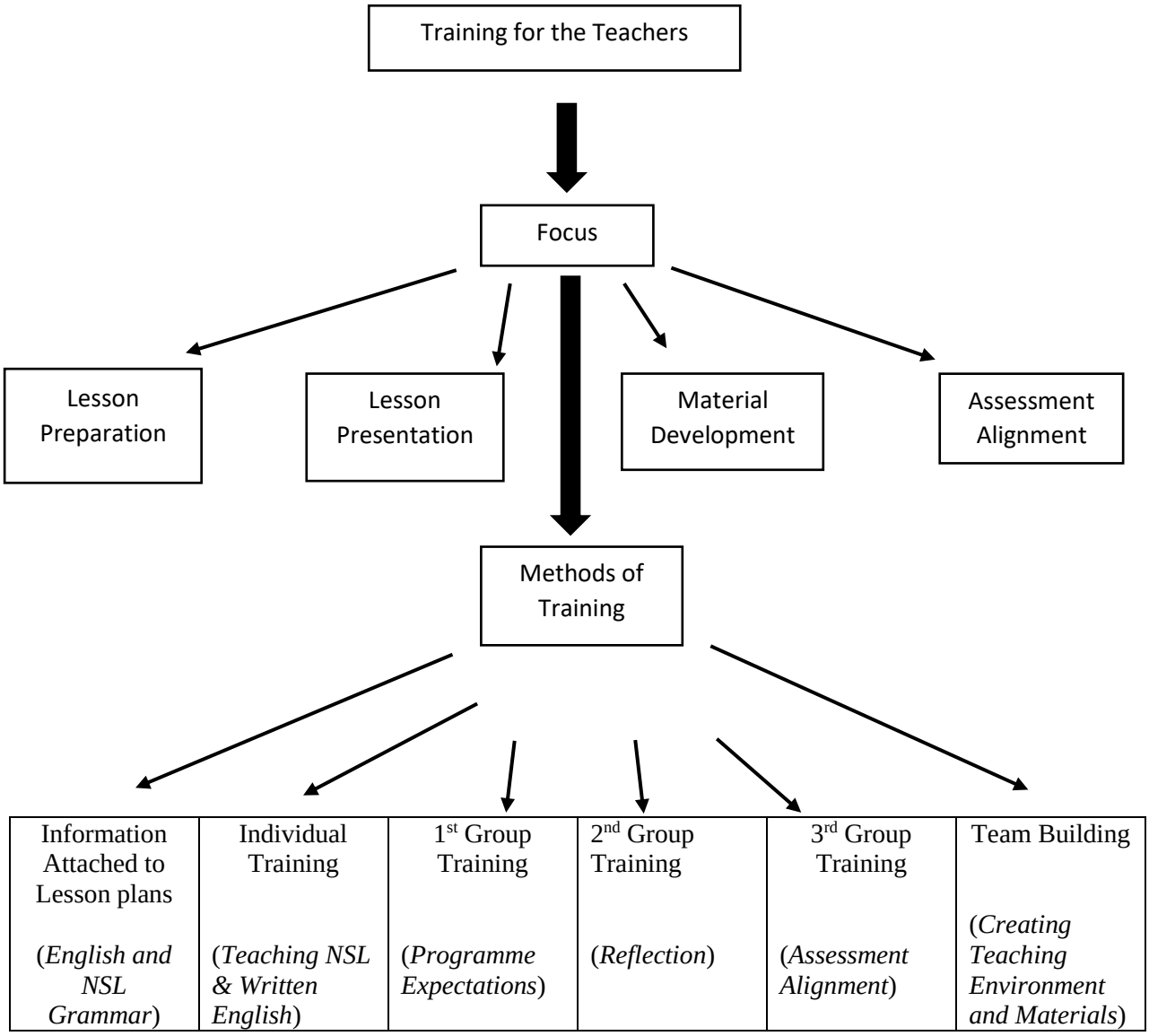


Figure 4.8: Summary of training provided to the teachers

4.6 Programme evaluation

According to Knoors et al. (2014:2), most Bilingual Deaf programmes attempt to increase first-language acquisition and learning by providing an accessible Sign Language. Another goal is to incorporate Sign Language, Deaf culture, and Deaf professionals into education in order to improve deaf learners' social and emotional development, as well as their sense of self. Finally, to increase academic accomplishment and improve competency in the second language through reading and writing, building on the foundation of Sign Language. Learners are then perceived as Bilingual and Bicultural and are assumed to have the ability to interact in both worlds of hearing and deaf people (Knoors et al., 2014:2). The Bilingual-Bicultural literacy programme that is implemented in this study has similar aims with a principal objective; that is, to find the best instructional practice to teach the Bilingual-Bicultural approach that caters specifically for

the needs of deaf learners in Namibia. As stated earlier, the principal objective of the Bilingual-Bicultural literacy intervention programme gave way for programme evaluation.

When reviewing programmes, the W.K. Kellogg Foundation (2001:1) recommends using the logic model approach. A logic model, they claim, is a useful tool for effective programme development, implementation, and evaluation. It's a graphic way of presenting and sharing an understanding of the relationships between the resources available to run a programme, the planned activities, and the desired changes or outcomes. When reviewing a programme, using the logic model method can lead to more effective programming, better learning opportunities, better documenting of outcomes, and shared understanding about what works and why (W.K. Kellogg Foundation, 2001:1). The theory approach logic model tool for assessment was employed in the current study to systematically construct a framework for effectively planning, implementing, and evaluating the Bilingual-Bicultural literacy programme. Theoretical ideas are connected together in a theory approach model to explain the underlying programme assumptions. The focus is on the problem or issue at hand, as well as the rationale for providing the remedies recommended in the programme (W.K. Kellogg Foundation, 2001). The logic model method for evaluating the Bilingual-Bicultural literacy programme is outlined below.

Assumptions	Inputs	Activities	Output	Outcomes	Impact
First-language competency in NSL is needed to develop a second language (Written English)	Teaching and learning plans	Offering a well-structured Bilingual-Bicultural literacy programme for deaf learners	NSL taught as basis for Written English	Well-developed NSL teaching approach	Improved literacy in NSL
Language development through NSL would assist the quality of communication and the level of comprehension needed to achieve literacy	Lesson plans		Bilingual learning environment	Well-developed Written English teaching approach	
Parents and teachers play a fundamental role in the deaf child's language development	Material development	Teaching a well-structured Bilingual-Bicultural literacy programme for deaf learners	Well informed teachers and parents	Teaching in a Sign Bilingual context	Improved literacy in Written English
The understanding of well-directed instructional practices supports effective learning and teaching	Training		Available teaching and learning materials	Adequate and sufficient NSL and Written English Teaching material	

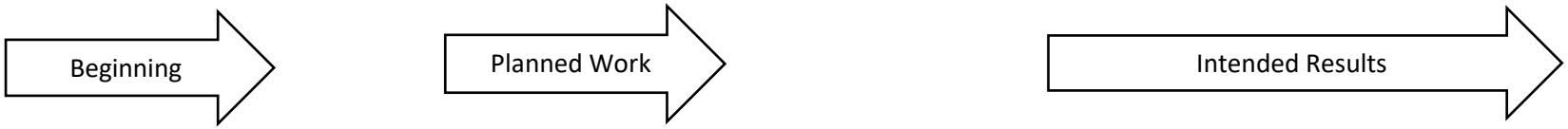


Figure 4.9: Logic model tool for evaluation of the Bilingual-Bicultural literacy programme

The outline of the logic model captures and exemplifies the purpose and content of the Bilingual-Bicultural literacy intervention programme. Reflection on the primary research objectives and the logic model guided the researcher to develop evaluation questions that could be used to guide the evaluation process of the Bilingual-Bicultural literacy intervention programme. The W.K. Kellogg Foundation (2001:35) describes two types of evaluation questions, which are formative and summative. Formative evaluation questions can assist with improving a programme as it focuses on assessing the process of a programme (Dane, 2011:299). Summative evaluation questions assist in assessing the outcome of a programme and whether the programme worked as it was planned (Dane, 2011:299). As both kinds of evaluative questions generate information that determines the extent to which a programme has had the success that was intended, the researcher used both types of formative and summative evaluation questions. To create a clear focus of the information that is needed for the programme evaluation, the following questions were formulated:

- How can a favourable school environment be created for a deaf child to learn a language and become biliterate?
- How do teacher attributes affect the language learning and biliteracy of deaf learners?
- How can teachers be supported to teach deaf learners?
- How does parental involvement affect the learning and biliteracy of deaf learners?
- How can teachers gain from the Bilingual-Bicultural literacy intervention programme?
- How does the Bilingual-Bicultural literacy intervention programme impact the language learning and biliteracy of deaf learners?

4.7 Data analysis and interpretation

The goal of data analysis, according to Mouton (2011:108), is to meticulously inspect the data and make sense of various constitutive elements by examining the relationships between different concepts and observing for any patterns or trends that can be identified and established as themes in the data. To interpret data involves putting together pieces of data into meaningful themes, merging it into larger comprehensible units, and relating the results to the existing theoretical literature. The outcome of interpretation can affirm or challenge the existing literature and must be reported accordingly (Mouton, 2011:109). The main objectives of this study were:

- To determine the language ability of deaf learners,
- To determine how biliteracy skills in deaf learners can improve after the application of an intervention programme,
- To explore the roles of teachers and parents in the support of biliteracy for deaf learners, and
- To explore challenges, faced in implementing a biliteracy programme at a deaf school.

These research objectives led to the implementation of a Bilingual-Bicultural literacy programme for deaf learners. The data for this study consist of quantitative data in the form of measurements based on diagnostic tests and qualitative data in the form of document analysis observations, field notes, unstructured interviews, and programme evaluation. Johnson and Christensen (2014:611) refer to this as multi-data, which led the researcher to conduct a multi-data analysis following the procedures for multi-data analysis as proposed by Creswell and Clark (2011:213); Johnson and Christensen (2014:613); Leedy and Ormrod (2016:338).

The analysis process started by recording the results of the diagnostic tests from the quantitative data to allow for examination and a direct comparison of the results of the pre and post-tests. Leedy and Ormrod (2016:338) suggest calculating basic descriptive statistics, such as mean scores for condensing quantitative data. The mean scores for each grade and the total mean scores for each of the junior primary phases (Grade 1–3) are calculated and presented. Pietersen and Maree (2007:187) deliberate that mean scores are calculated as the arithmetic average of data values. They suggest the following formula to calculate mean scores:

$$x = \textit{total of all the values} \div \textit{the number of values}$$

Any differences in the mean scores of the pre-tests and post-tests are considered as sufficient justification and consideration of change. Paired t-tests are used to analyse the NSL and Written English raw assessment scores. According to Mahbobi and Tiemann (2015:51) paired t-tests are done when you have a sample of participants and for each participant a measurement is done before an intervention and after an intervention. For each participant there will thus be a difference between before intervention and after intervention. This is done to determine any

change in the research participants as a result of the intervention. This is also to determine whether the progress of the participants is statistically significant and whether any differences measure in means occurred by chance and the probability for the differences in means to have developed by chance (Mahbobi & Tiemann, 2015:51).

For the qualitative data, the process was followed, as suggested by Leedy and Ormrod (2016:338). An overall inspection was done of the qualitative data to establish preliminary themes to condense the data. The results from the transcribed interviews, observations, field notes, and document analysis of the qualitative data were thus carefully examined to find any patterns or trends that could establish preliminary themes.

The data sets were then re-examined to make sense of all the information collected. When familiarity was established with the information that was collected, the information was broken up into parts that could fit into different categories. For this study, themes were established from the programme evaluation questions that were developed based on the main research objectives, and the logic model. These themes were used as different categories. Additional, related information that was gathered through the literature review was used as sub-categories. Supplementary categories were established for data that could not be placed under the key or subcategories and that had different relations from the key or subcategories. The researcher proceeded to search for repeated patterns in the data and patterns that showed a connection between different parts of the data.

The data were then visually displayed in tables and pictures to allow for a graphic review of data. Thereafter the quantitative data were transformed into qualitative entities. A method of turning quantitative data into qualitative entities is to form narrative profiles in which narrative descriptions are made from the statistical data (Johnson & Christensen, 2014:612). The following qualitatively defined profiles were established from the quantitative data: higher performers, lower performers and supplementary learner participants.

The qualitative data were then related to the quantitative data that had been transformed to qualitative data. This process is also referred to as methodological triangulation and described as the utilisation of both quantitative and qualitative data collection analyses in studying one

phenomenon (Hussein, 2009:4). The intention is to support each method as the strength of one method may compensate for the weakness of the other. The data were then consolidated by combining both types of data to create additional data sets. Data from different sources were compared and all data were integrated into a coherent whole. This process is referred to as data triangulation or source triangulation and it is utilised for data validation purposes (Hussein, 2009:3)

The researcher then reflected on the impact of the findings and on literature that might affirm or challenge the findings (Creswell & Clark, 2011:213; Johnson & Christensen, 2014:613; Leedy & Ormrod, 2016:338). The last stage was to validate the accuracy of the analysed data. This will be discussed in the next session under the validity of the study.

4.8 The validity of the study

In this study, validity was an important aspect to ensure that the objectives of the study were achieved. Leedy and Ormrod (2016:103) reason that despite a particularly chosen research methodology, careful consideration must be given to the validity of the approach for the purpose of the study and the accuracy and meaningfulness of the results that can address the research problem.

The correctness or truthfulness of the inferences made from the study's results is referred to as research validity in quantitative research (Johnson & Christensen, 2014:279). Validity is defined as being plausible, credible, trustworthy, and defensible in qualitative research (Johnson & Christensen, 2014:299). As multi-method research was employed in this study, involving both quantitative and qualitative data, a discussion will now follow on the validation of both stands of data.

To collect the quantitative data for this study, special tailor-made diagnostic tests were designed for the particular population and the context of the study. The researcher made sure that the chosen tests could provide answers to the research objectives and evaluation questions that it was intended for. Johnson and Christensen (2014:172) reason that in selecting a research tool, you need to make sure that the tool that one selects for one’s data collection will provide one with the information

that one seeks, that it measures what it intends to measure and that it is suitable for the particular population and context.

Face validity and content validity were ensured as the different instruments for each of the grades were designed. Leedy and Ormrod (2016:115) describe face validity as the extent to which instruments appear on the surface to measure what it is supposed to measure. Content validity is the extent to which an instrument represents the content area being measured (Leedy & Ormrod, 2016:115). The instruments were drawn up with careful consideration of the prescribed topics from the syllabi, and the adapted IPMs for each grade. The items in the assessment instruments were systematically developed and selected with care to incorporate manageable activities to more stimulating activities for the assessment of each grade level. This was done to reduce inherent biases of selecting items that are only catering for learners on one level and to further establish validity (Pizzo & Chilvers, 2019:10). In the assistance to ensure face validity and content validity, an expert from the CCDS, a deaf colleague, and the junior primary teachers at the school for deaf learners were consulted when the instruments were drawn up. For consistency, the tests were administered by the researcher alone. Each learner was individually assessed for each of the assessment instruments. The results of the test were shared and discussed with the teachers. Comparisons of results were then made with similar assessment activities done by the teachers and post-intervention test results.

In qualitative research, validity is referred to as credible and trustworthy research (Nieuwenhuis, 2007:80). To validate the qualitative data, the researcher used multiple methods of data collection. Multiple data collecting methods, such as observation, interviews, and document analysis, according to Nieuwenhuis (2007:80), will lead to trustworthiness. Johnson and Christensen (2014:299), in alliance with Leedy and Ormrod (2016:278) warn about the researcher's bias that can be a problem and threat to the validity of qualitative data. This is a result of a researcher allowing personal views and perspectives to interfere with how data are interpreted and how the research is conducted. Leedy and Ormrod (2016:278) suggest the method of reflexivity where the researcher does self-reflection and identifies areas of possibly being bias and taking steps to reduce such influences. To prevent researcher bias to hinder the validity of the data for this study, the researcher confirmed interpretations that were made regarding the interviews and observations, with the participants.

Another suggestion made by Leedy and Ormrod (2016:278) to validate qualitative data is to spend significant time on the research location. They believe that brief visits to the research location are unlikely to produce quality data and suggest sufficient time on site to draw an accurate, multifaceted understanding of the research phenomenon. During the period of the intervention programme, February–October 2018, the researcher visited the school every week for at least 1–2 hours. During this time, the researcher did participant observation and was part of the research process and working with the participants in the situation to formulate intervention strategies. The researcher got the opportunity to see experiences first-hand from the views of the participants.

Considering the suggestions made by Creswell and Clark (2011:241) that the merging of data in multi-method research has various validity considerations and that researchers must engage in multiple strategies to minimise validity threads. As discussed above, various methods were used to authenticate the data of this study. In addition to this, triangulation was used to further validate the outcome of the study. Johnson and Christensen (2014:299) state that triangulation is a validation method that is based on the pursuit of convergence of research results. It is systematically built into your research, allowing you to cross-check information and conclusions using multiple procedures or sources. Hussein (2009:3) defines triangulation as "the use of multiple methods (mainly quantitative and qualitative methods), theoretical perspectives, data sources, investigators and analysis methods to studying the same phenomenon to increase study credibility". This implies that triangulation is the combination of two or more methodological approaches, as in the case of the current study. It also implies that it can be the combination of two or more data sources, also as in the case of the current study. Johnson and Christensen (2012:269) think that by using triangulation, the weaknesses, and strengths of one method are neutralised by the weaknesses and strengths of the other methods. During this study, the quantitative data present an idea of learners' performance, but not possible reasons for the performance. The reasons are presented through the qualitative data that were obtained through various sources. Similarly, the weaknesses and strengths of one source or research tool are neutralised by the weaknesses and strengths of the other source or tool. In this study, a weakness of the interviews was that the participants could give responses they felt were the appropriate responses but might not necessarily reflect the true situation. This was overlapped by the strength of the observations where the researcher could see what was happening. The strength of the interviews was that the researcher

could delve into the thinking and reasoning of different interviewees, where this could not be done during the non-participant observation.

The next section that follows is a discussion on the ethical considerations and steps that were taken for the security of the research participants.

4.9 Ethical issues

Johnson and Christensen (2014:126) believe that an important aspect of the development and implementation of any research study is the consideration of research ethics. A researcher must understand the ethical principles and procedures to assist him or her to prevent any abuse that could occur during the research process. According to Ryen (2011:418), the three main ethical issues to be considered in a study are consent, confidentiality, and trust. In line with Ryen (2011), the following ethical issues were pursued and considered critical: seeking permission and consent, ensuring confidentiality, seeking voluntary participation, and obtaining and keeping a trustful and respectful relationship with the participants. This research formed part of a broader literacy project funded by the National Research Foundation of South Africa, entitled: Cognitive Linguistic Processing of L1 and L2 learners with typical and atypical patterns of development (Grant Number: 87728) (see Ethics Letter, Addendum A). The data for the study were gathered within the guidelines and dates of the ethical clearance for the project.

The researcher first obtained written permission from the Ministry of Education Arts and Culture and thereafter from the school principal to conduct the research at the school for deaf learners (see Addendum B, C, D & E). Johnson and Christensen (2014:133) think that research participants must give consent before they participate in a study and before the researcher can use any records regarding the participants for research purposes. Johnson and Christensen (2014:136) further state that minors cannot decide regarding consent, therefore consent needs to be obtained from their parents or guardian, after fully informing them about all the features of the study. On an invitation to a school parent meeting, the researcher was provided with an opportunity to explain the aims and objectives of the Bilingual-Bicultural literacy intervention programme to the parents and guardians of the learners. Thereafter written permission was requested from the parents and guardians to involve the learners in the intervention programme (see Addendum F). Learners were only included in the study after written consent was obtained from parents and guardians. All the

learners for the junior primary phase of the school were included in the study. This eliminated any ethical concerns of withholding individual learners from benefiting from the Bilingual-Bicultural literacy intervention programme (Creswell, 2014b:347). Written consent was also first obtained from the teachers to be included in the study (see Addendum G). The researcher explained to the teachers that they were free to withdraw from the study at any point in time, should they seek the purpose to do so. Before the interviews were conducted with the various participants, the researcher first made individual appointments with each of the participants to do an interview.

The participants' anonymity was and still will be protected and confidentiality is ensured by de-identifying all participants and by using pseudonyms. The identity of participants will thus be kept confidential. Data collection was regarded as strictly confidential. The data were kept confidential during data collection, in that it was not shared with individuals outside of the research project (Creswell 2014b:187). The researcher tried her best to respect and earn the trust of the participants. In the cases where the teachers did not wish to participate in certain aspects of the study, their wishes were respected. When the researcher visited the classes for observation, she shared the notes of her observations and comments with the respective teacher. She also ensured the teachers that her observations will remain confidential and will only be used in the analysis and reporting of the data. Interviews were transcribed and shared with the interviewees to ensure that it reflected their views and opinions during interviews. All data collected will be stored for a minimum of three years in a safe and secure place at the University of Namibia.

4.10 Summary

This study implemented a Bilingual-Bicultural literacy programme for deaf learners at a school for the deaf in Namibia. The study was a multi-method research design focused on programme evaluation. By undertaking this research approach, the researcher was allowed the opportunity to gain a more in-depth understanding of the research phenomenon through the various research tools that were used to collect the data. For the quantitative inquiry, an experimental research design was used in the form of a one-group pre-test post-test design. Diagnostic tests were tailor-made to execute the pre and post-intervention tests. For the qualitative inquiry, a case study research approach was used. This allowed the researcher to use multiple sources and techniques to collect data. Data were gathered by doing document analysis, observations and field notes, interviews,

and programme evaluation. This chapter provided an outline of the methods, newly developed tools and procedures that were used to collect the data. The validity and ethical issues were cautiously reflected on in the study. Based on the work that was done in this chapter, Chapter 5 provides a detailed presentation, analysis, and discussion of the multi-method results.

CHAPTER 5: PRESENTATION, ANALYSIS AND DISCUSSION OF THE RESEARCH FINDINGS

5.1 Introduction

This chapter presents findings on the implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia. The results of the programme evaluation within the multi-method research design as deliberated over in Chapter 4, are presented and discussed. The multi-method approach followed in the study involved data-gathering to obtain a more holistic perspective on the implementation of the Bilingual-Bicultural literacy programme.

A multi-data analysis was done in which the themes that were established came from the main research objectives and programme evaluation questions. These themes were used as different categories. Supplementary categories were established for data that could not be placed under the key or sub-categories and that had different relations from the key or sub-categories. The results from the quantitative data of the study in the form of the diagnostic tests for NSL and Written English are presented and discussed first. This will be followed by a presentation and discussion on the results from the qualitative data of the study in the form of observations, field notes, interviews, and document analysis. The last part of the discussion will be on consolidated data from both quantitative and qualitative data where data from different sources will be integrated into the presentation and discussion. Following is an outline of how the themes that will be discussed were established (see Figure 17).

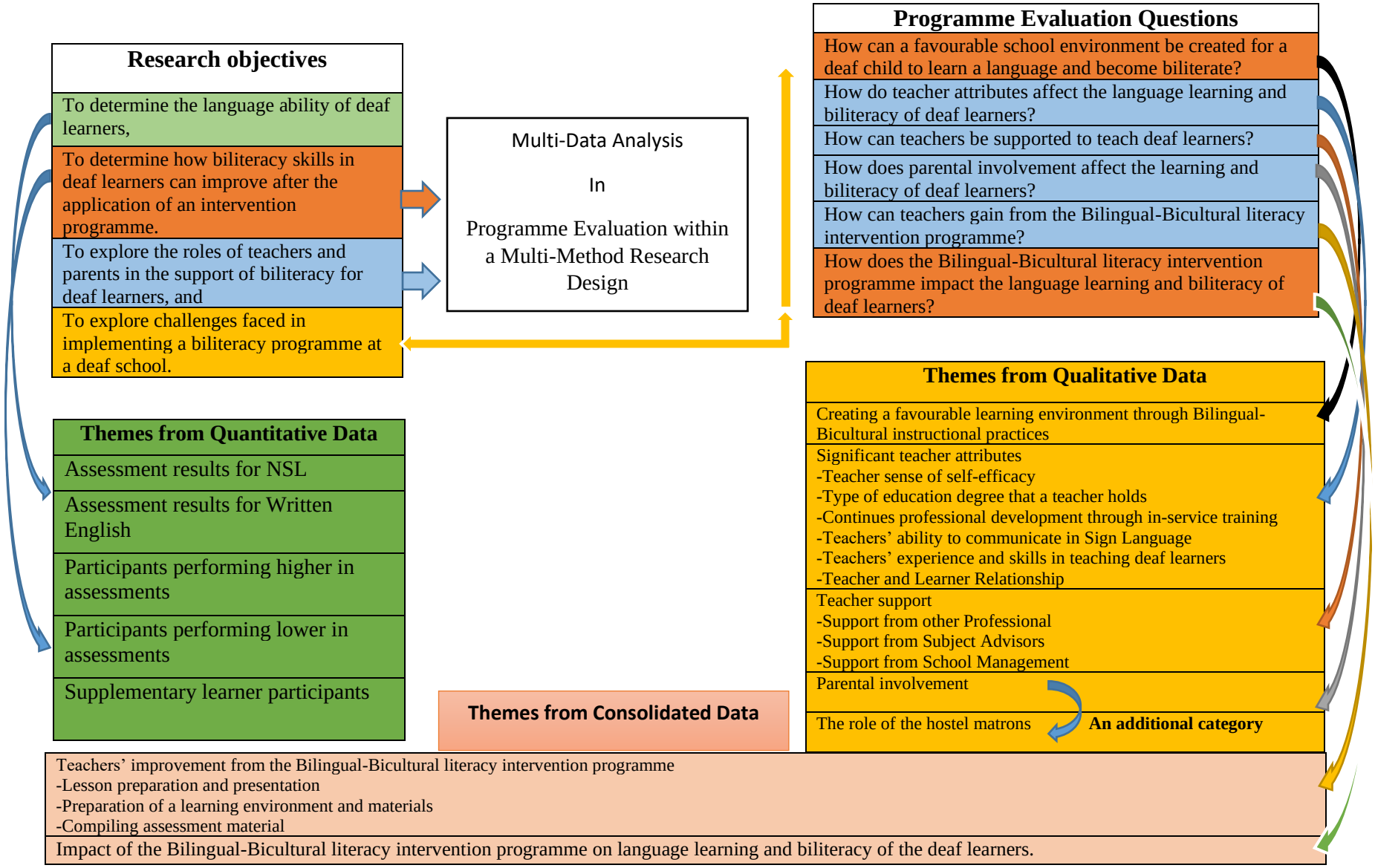


Figure 5.1: Established themes of discussion

5.2 Quantitative data results

The quantitative results are presented according to the assessment instruments used for NSL and Written English. The assessment instruments were administered by the researcher as pre- and post-intervention tests. The NSL assessment instruments have five different testing components that focus on Picture Signing, Sign Identification, Arranging picture stories, Expression and Communication, and Observation Comprehension. The scores from the five different activities are calculated together to obtain the final score. The Written English assessment instruments also have five different testing components that focus on Word Reading, Word Identification, Fingerspelling, Syntax Development, and Reading Comprehension. The scores from the five different activities are calculated together to obtain the final score. The results are interpreted and discussed in the context of the bigger picture permitted by the multi-method approach.

5.2.1 Results from NSL assessment instruments

Table 5.1 below demonstrates the total scores of each of the learners in the pre- and post-intervention tests of NSL. Table 5.2 demonstrates the scores on pre- and post-test of the five different testing components of NSL (Picture Signing, Sign Identification, Arranging of picture stories, Expression and Communication, and Observation Comprehension).

Table 5.1: Total pre- and post-intervention test scores for NSL

	Learner	Results of Pre- and Post-Tests	
		PRE /100	**POST /100**
1	1A	26	63
2	1B	5	55
3	1C	37	55
4	1D	44	73
5	1E	38	76
6	1F	24	49
7	1G	35	58
8	1H	50	90
9	1I	21	35
10	1J	47	62
11	1K	25	48
	Average Score	***32***	***60***
12	2A	34	48
13	2B	37	56
14	2C	57	88
15	2D	51	68
16	2E	41	62
17	2F	42	56
18	2G	39	54
19	2H	62	94
20	2I	50	77
21	2J	41	68
22	2K	30	63
23	2L	39	67
24	2M	36	68
25	2N	58	70
	Average Score	***44***	***67***
26	3A	38	76
27	3B	55	84
28	3C	66	91
29	3D	38	75
30	3E	41	76
31	3F	55	82
32	3G	49	76
33	3H	38	71
34	3I	66	92
35	3J	57	85
36	3K	63	89
37	3L	46	75
38	3M	53	78
	Average Score	***51***	***81***
	Total Average Score	**43**	**70**

Table 5.2: Pre- and Post-intervention test scores for different NSL components

Learner	Picture Signing /20		Sign Identification /20		Arranging picture stories in chronological order. /20		Expression and Communication /20		Observations and Comprehension /20	
	PRE	**POST**	PRE	**POST**	PRE	**POST**	PRE	**POST**	PRE	**POST**
1A	7	**17**	7	**19**	4	**4**	4	**12**	4	**11**
1B	2	**15**	3	**18**	0	**6**	0	**12**	0	**4**
1C	14	**20**	10	**18**	4	**4**	6	**8**	3	**5**
1D	14	**18**	15	**17**	5	**11**	8	**17**	2	**10**
1E	10	**17**	13	**19**	9	**17**	4	**13**	2	**10**
1F	10	**14**	5	**12**	3	**6**	5	**11**	1	**6**
1G	12	**19**	12	**17**	1	**4**	8	**10**	2	**8**
1H	13	**19**	18	**20**	4	**16**	8	**18**	7	**17**
1I	9	**17**	5	**6**	2	**3**	5	**8**	0	**1**
1 J	15	**18**	19	**19**	4	**7**	8	**12**	1	**6**
1K	6	**15**	10	**13**	3	**2**	3	**13**	3	**5**
Total Average	10	**17**	11	**16**	4	**7**	5	**12**	2	**8**
2A	6	**15**	10	**15**	0	**2**	10	**9**	8	**7**
2B	6	**15**	13	**19**	3	**3**	10	**12**	5	**7**
2C	13	**19**	19	**20**	1	**16**	12	**18**	12	**15**
2D	12	**18**	17	**19**	0	**5**	14	**15**	8	**11**
2E	11	**11**	11	**16**	0	**7**	10	**12**	9	**16**
2F	11	**15**	14	**17**	0	**5**	6	**10**	11	**9**
2G	9	**18**	15	**18**	1	**2**	6	**8**	8	**8**
2H	16	**19**	17	**20**	8	**20**	11	**18**	10	**17**
2I	12	**18**	16	**20**	1	**5**	15	**16**	6	**18**
2J	10	**19**	8	**18**	0	**5**	13	**10**	10	**16**
2K	9	**16**	13	**17**	4	**6**	1	**13**	3	**11**
2L	10	**17**	16	**18**	0	**7**	9	**12**	4	**13**
2M	7	**17**	14	**18**	0	**3**	10	**16**	5	**14**
2N	12	**18**	17	**19**	4	**4**	14	**15**	11	**14**
Total Average	10	**17**	14	**18**	2	**6**	10	**13**	8	**13**
3A	7	**18**	16	**18**	1	**14**	9	**13**	5	**13**
3B	9	**17**	19	**20**	5	**14**	10	**14**	12	**19**
3C	12	**19**	16	**20**	11	**16**	11	**17**	16	**19**
3D	8	**17**	15	**19**	0	**16**	6	**12**	9	**11**
3E	5	**12**	18	**17**	2	**15**	6	**13**	10	**19**
3F	10	**18**	18	**19**	10	**18**	7	**12**	10	**15**
3G	5	**17**	18	**18**	4	**11**	7	**12**	15	**18**
3H	8	**13**	11	**17**	4	**12**	7	**15**	8	**14**
3I	11	**19**	17	**20**	11	**17**	12	**16**	15	**20**
3J	10	**18**	18	**19**	2	**14**	14	**16**	13	**18**
3K	11	**19**	18	**20**	13	**17**	6	**16**	15	**17**
3L	8	**17**	15	**18**	3	**15**	5	**10**	15	**15**
3M	8	**17**	18	**19**	4	**17**	8	**11**	15	**14**
Total Average	9	**17**	17	**19**	5	**15**	8	**14**	12	**16**

In relation to Table 5.1, the total average score of 43 out of 100 in the pre-intervention test to 70 out of 100 in the post-intervention test suggests a significant improvement in NSL skills in all three grades. A higher average score in pre- and post-test can also be noted as the grades progress. This can be assigned to the progression of years of school attendance in an NSL environment. Paired sample *t*-tests were conducted to compare the pre- and post-test scores of deaf learners, i.e. prior to and after the intervention study (total scores). Results yielded statistically significant results when comparing the pre- and post-test NSL total scores: (M=26.82, SD=14.3); $t(37)=19.34$, $p < 0.0001$) To obtain a better understanding of the overall performance of the learners, Table 5.2 presents scores on pre- and post-test of the different testing components.

Picture Signing and Sign Identification present the best performance among the five components. The learners overall performed better in the Sign Identification component. This component tests the learners' ability to identify a correct picture from a group of pictures based on a particular sign given by the assessor. The Picture Signing component tests the learners' ability to give the correct sign for an item on a picture. Whereas the learners performed better in the Sign Identification component, showing an average score of 17 out of 20 in the pre-test and an average score of 19 out of 20 for the post-test, a bigger improvement was made in the Picture Signing component, showing an average score of 9out of 20 in the pre-test and an average score of 17 out of 20 in the post-test.

The component of Arranging Picture Stories in chronological order presented a challenge to the learners, especially in the pre-test. The Grade 3 group, however, showed a significant improvement in this component, from an average score of 7out of 20 in the pre-test to an average score of 15 out of 20 in the post-test. The component for Expression and Communication also presented a challenge to the learners in the pre-test, with an average score of 8 out of 20, but it improved for all grade groups in the post-test, showing an average score of 14 out of 20. When computing inferential statistics, *t*-tests have also shown significant results for all test variables (i.e. the five sub-tests) included in this study, namely: Picture Signing, (M=7.29, SD=2.05); $t(37)=17.36$, $p < 0.0001$); Sign Identification, (M=3.74, SD=6.67); $t(37)=6.97$, $p < 0.0001$); Arranging of picture stories, (M=6.18, SD=5.83); $t(37)=8.10$, $p < 0.0001$); Expression and Communication, (M=4.92, SD=2.88); $t(37)=8.65$, $p < 0.0001$); and Observation Comprehension, (M=4.68, SD=4.99); $t(37)=8.50$, $p < 0.0001$).

Grade 1 and Grade 2 learners were awarded marks if the WHO, WHAT, WHERE and HOW questions were answered in what they signed. The learners in these grades still struggle to express themselves and to express themselves in correct NSL. The main objective was thus to assess the learner's ability to communicate any information they could gather from a picture. Grade 3 learners were awarded marks if they used correct, location, and placement of people and objects, classifiers, facial expressions, verb movements, and if their storyline had a beginning, middle, and an end. Being able to arrange their stories in a correct order linked with their ability to arrange pictures from a picture story in the correct order. Grade 3 learners were assessed differently, as they were more advanced and had more years of exposure to NSL.

Marschark (1997:222) believes that errors in deaf learners' writing result from their failure to adopt a "discourse orientation". A suggestion as to why deaf learners fail to make use of discourse structure in their writing is because they lack the rules of conversation that is normally acquired by monitoring ongoing verbal interactions (Marschark, 1997:222). Effective teacher-learner discourse practices are regarded as critical for the joint construction of knowledge (Singleton & Morgan, 2006:355). Kuntze et al. (2014:211) believe that a good deal of social interaction is typically provided in a classroom for deaf learners. This is where the teachers encourage expression and communication during story reading sessions by asking the learners open-ended questions, by answering the learners' questions, and by encouraging the learners to sign about print in various contexts. A teacher can use this social mediation, or in this case, expression and communication, in a variety of daily activities and can provide learners with just enough scaffolding to help them fathom meaning as independently as possible (Kuntze et al., 2014:212). Social mediation can facilitate learners' understanding of a range of texts and with the necessary support, they gain a deeper understanding of topics they want to learn about.

In relation to Table 5.2, the component for observation and comprehension presented a bigger challenge for the Grade 1 and 2 groups than for the Grade 3 group. However, improvement can be noted in the post-test scores for this component in all three grades. Kuntze et al. (2014:208) argue that the acquisition of language is an unconscious process that takes place in the context of communication. Exposure to a language and opportunity is thus needed for a child to be able to communicate. For deaf children, it is important to be exposed to a language environment where they can observe communication that flows easily, as the development of eye contact or visual

engagement are important aspects not only of Sign Language, but also of language development in general. Visual attention and engagement skills lead to more opportunities for communication, learning, and the acquisition of language and literacy (Kuntze et al., 2014:208).

5.2.2 Results from Written English assessment instruments

According to Ortiz and Ordoňez-Jasis (2010:131), a very basic definition of literacy is the ability to read and write. Hrastinski and Wilbur (2016:156) believe that without age-appropriate reading and writing skills, participation in classroom activities is amiss and the risk for academic failure is high. The Ministry of Education, Arts and Culture (2015:1) states that within the Namibian context, English is considered a very important means of communication that links the deaf child with the hearing world. The teaching of the correct English structure is considered a high priority; as deaf learners find it difficult to write properly structured English sentences due to the NSL influence. Table 5.3 below demonstrates the total scores of each of the learners in the pre- and post-intervention tests for Written English. Table 5.4 demonstrates the scores on pre- and post-test of the different testing components for Written English (Word Reading, Word Identification, Fingerspelling, Syntax Development and Reading Comprehension). Paired sample *t*-tests were performed to determine whether these results were statistically significant. The results yielded statistically significant results pertaining to the pre-and post-test scores for English written language (i.e. the total score as well as for the different sub-tests). For example: Total score, (M=12.24, SD=28.36); $t(37)=4.15$, $p < 0.0001$); Word Reading, (M=4.5, SD=9.22); $t(37)=4.38$, $p < 0.00009$); Word Identification, (M=1.55, SD=5.57); $t(37)=2.84$, $p < 0.0072$); Fingerspelling, (M=2.3, SD=3.69); $t(37)=3.93$, $p < 0.0003$); Syntax Development (M=1.95, SD=4.02); $t(37)=2.71$, $p < 0.0010$) and Reading Comprehension, (M=2.16, SD=5.10); $t(37)=3.90$, $p < 0.0003$).

Table 5.3: Total pre- and post-intervention test scores for Written English

	Learner	Results of Pre- and Post-Tests	
		PRE /100	**POST /100**
1	1A	9	11
2	1B	9	11
3	1C	12	18
4	1D	12	17
5	1E	6	14
6	1F	11	8
7	1G	11	14
8	1H	11	5
9	1 I	11	10
10	1J	10	10
11	1K	10	12
	Average Score	***10***	***12***
12	2A	15	13
13	2B	15	15
14	2C	23	31
15	2D	7	9
16	2E	15	25
17	2F	15	8
18	2G	12	20
19	2H	38	72
20	2 I	28	52
21	2J	15	17
22	2K	9	9
23	2 L	14	15
24	2M	12	14
25	2 N	16	11
	Average Score	***17***	***22***
26	3A	13	37
27	3B	22	68
28	3C	43	92
29	3D	16	16
30	3E	11	40
31	3F	30	81
32	3G	12	37
33	3H	8	11
34	3I	31	76
35	3J	29	76
36	3K	33	80
37	3L	11	14
38	3M	8	9
	Average Score	***21***	***49***
	Total Average Score	**16**	**28**

Table 5.4: Pre- and post-intervention test scores for different Written English components

Learner	Word Reading /30		Word Identification /20		Fingerspelling /15		Syntax Development /15		Reading Comprehension /20	
	PRE	**POST**	PRE	**POST**	PRE	**POST**	PRE	**POST**	PRE	**POST**
1A	0	**0**	5	**6**	0	**0**	4	**3**	0	**2**
1B	0	**0**	4	**5**	0	**0**	5	**6**	0	**0**
1C	0	**2**	7	**7**	0	**1**	5	**8**	0	**0**
1D	0	**0**	7	**9**	0	**1**	5	**4**	0	**3**
1E	0	**2**	4	**6**	0	**0**	2	**5**	0	**1**
1F	0	**1**	5	**2**	0	**0**	6	**5**	0	**0**
1G	0	**0**	4	**5**	0	**0**	7	**9**	0	**0**
1H	0	**0**	6	**2**	0	**0**	5	**3**	0	**0**
1 I	0	**0**	6	**5**	0	**0**	5	**5**	0	**0**
1 J	0	**2**	5	**6**	0	**0**	5	**4**	0	**0**
1K	0	**0**	5	**7**	0	**0**	5	**5**	0	**0**
Total Average	0	**1**	5	**5**	0	**0**	5	**5**	0	**1**
2A	0	**0**	3	**5**	0	**0**	8	**6**	4	**2**
2B	0	**1**	4	**8**	0	**0**	8	**6**	3	**0**
2C	0	**6**	8	**6**	0	**3**	8	**5**	7	**11**
2D	0	**0**	4	**3**	0	**0**	3	**5**	0	**1**
2E	3	**6**	4	**9**	0	**3**	5	**5**	3	**2**
2F	0	**0**	5	**4**	0	**0**	7	**2**	3	**2**
2G	0	**7**	5	**4**	0	**0**	5	**6**	2	**3**
2H	6	**21**	12	**16**	0	**7**	8	**8**	12	**20**
2I	6	**11**	10	**15**	1	**2**	8	**11**	3	**13**
2J	0	**0**	7	**6**	0	**0**	8	**6**	0	**5**
2K	0	**0**	3	**1**	0	**0**	4	**6**	2	**2**
2L	1	**4**	7	**6**	0	**0**	4	**3**	2	**2**
2M	0	**2**	6	**4**	0	**0**	6	**5**	0	**3**
2N	1	**0**	4	**4**	0	**0**	8	**6**	3	**1**
Total Average	1	**4**	6	**7**	0	**1**	6	**6**	3	**5**
3A	2	**9**	7	**16**	0	**3**	2	**4**	2	**5**
3B	4	**21**	9	**18**	0	**6**	3	**13**	6	**10**
3C	14	**29**	16	**20**	3	**12**	5	**15**	5	**16**
3D	3	**3**	9	**7**	0	**1**	0	**2**	4	**3**
3E	2	**7**	7	**13**	0	**4**	1	**10**	1	**6**
3F	6	**26**	15	**19**	0	**9**	5	**15**	4	**12**
3G	0	**10**	5	**11**	0	**5**	2	**5**	5	**6**
3H	0	**1**	7	**6**	0	**0**	1	**1**	0	**3**
3I	9	**23**	14	**17**	2	**11**	2	**14**	4	**11**
3J	7	**27**	11	**19**	1	**9**	4	**13**	6	**8**
3K	10	**24**	15	**18**	0	**11**	3	**15**	5	**12**
3L	2	**2**	6	**8**	0	**0**	1	**2**	2	**2**
3M	0	**0**	8	**5**	0	**0**	0	**1**	0	**3**
Total Average	5	**14**	10	**14**	0	**5**	2	**8**	3	**7**

In Table 5.3 a difference is noted in the total average score for Written English, with an average pre-test score of 16 out of 100 and an average post-test score of 28 out of 100. It is a very small difference in relation to the difference that was noted in Table 5.1, with the total average pre-test score of 43 out of 100 and the total average post-test score of 70 out of 100 for NSL. The same as in NSL, a bigger progress in the scores are noted as the grades are progressing. The Grade 3 group shows a bigger difference between the pre and post-test with an average score of 21 out of 100 for pre-test and 49 out of 100 for the post-test. The Grade 1 group shows a very small difference with an average score of 10 out of 100 for pre-test and 12 out 100 for the post-test.

The Word Reading and Fingerspelling components were a challenge for the learners. For these components, the Grade 1 group shows average scores between zero and one for the pre- and post-test. The Grade 2 group shows average scores between zero and four for pre- and post-test. For the Grade 3 group, the average scores for the Word Reading component shows a difference, with an average score of 5 out of 30 for the pre-test and 14 out of 30 for the post-test. A difference is also noted for the Fingerspelling component for the Grade 3 group, with an average score of 0 out of 15 for the pre-test and 5 out of 15 for the post-test.

No significant difference is noted for the Word Identification component for the Grade 1 and 2 groups. The Grade 3 group, however, do show a difference, with an average score of 10 out of 20 for the pre-test and 14 out of 20 for the post-test. No significant difference is noted for the Syntax Development component for the Grade 1 and 2 groups. The Grade 3 group again shows a difference, with an average score of 2 out of 15 for the pre-test and 8 out of 15 for the post-test. The Reading Comprehension component shows a difference for all three groups. The Grade 1 group shows a very small difference, with an average score of 0 out of 20 for pre-test and 1 out of 20 for the post-test. The Grade 2 group shows a difference, with an average score of 3 out of 20 for pre-test and five out of 20 for the post-test. The Grade 3 group shows a bigger difference than the other two groups, with an average score of three out of 20 for pre-test and 7 out of 20 for the post-test.

Fluency, according to Wauters and De Klerk (2014:250), is an important skill in reading development that connects word reading and text comprehension. Reading fluency for deaf learners whose primary means of communication is Sign Language entails the representation of written text using signs rather than oral reading. Signed reading fluency, according to Wauters and

De Klerk (2014:251), is the ability of the signer to convert printed text into a fluent, signed version with signed key parts. This will show that the reader has pictured the meaning of the text in his or her mind. According to Wauters and De Klerk (2014:250), the learners' signed reading fluency and understanding of a reading passage have a positive relationship, implying that fluency is important regardless of the output modality. If a learner can fluently represent what he or she reads in a spoken language or Sign Language, it will help him or her understand the written content (Wauters & De Klerk, 2014:250).

5.2.3 Participants performing higher in the assessments

Some participants notably performed higher in the assessment activities based on their scores in the NSL and Written English assessments. To understand these higher scores, it is imperative to deliberate on the attributes of these learners. This can be done based on analysed documents on learners' history and performance and the field notes that were collected during the researcher's participant observation. Table 5.5 shows the results of these learners for both NSL and Written English. The table of the results for higher performing participants will be followed by a discussion on each of the individual learner's attributes.

Table 5.5: Results of higher-performing participants

	Learner	**Results of NSL /100**		**Results of Written English /100**	
		PRE	POST	PRE	POST
1	2H	62	94	38	72
2	2I	50	77	28	52
3	3B	55	84	22	68
4	3C	66	91	43	92
5	3F	55	82	30	81
6	3I	66	92	31	76
7	3J	57	85	29	76
8	3K	63	89	33	80

Learner 2H in the Grade 2 group is a nine-year-old boy. He did not attend the CLaSH kindergarten and lives at home with his family. His mother left her job and moved to the city to be with him. She is extremely supportive of his schoolwork and is attending regular NSL classes to be able to communicate with her son. Although she is a hearing mother with a deaf son, by attending NSL

classes she is able to interact with her child and assist him with his schoolwork. Learner 2H is enthusiastic, motivated, and very competitive with his schoolwork.

Learner 2I in the Grade 2 group is an eight-year-old girl. She did not attend the CLaSH kindergarten. It is her second year in the hostel, as her family lives in another town. This means that she has little contact and communication with them. Learner 2I is happy in the hostel and she is enthusiastic, motivated, and very competitive with her schoolwork.

Learner 3B in the Grade 3 group is an 11-year-old girl. She did not attend the CLaSH kindergarten, but was part of a disability centre in a nearby town. The principal of the disability centre personally enrolled the girl at the school and is still supporting her continuously. It is her third year in the in the hostel, which means that she has little contact and communication with her family. Learner 3B is happy in the hostel and shows enthusiasm, motivation, and competitiveness in her schoolwork.

Learner 3C in the Grade 3 group is a 10-year-old girl. She attended the CLaSH kindergarten. It is her third year in the hostel, which means she has little contact with her family. She has limited communication with them. Learner 3C is happy in the hostel and she is enthusiastic, motivated, and very competitive with her schoolwork.

Learner 3F in the Grade 3 group is a 10-year-old girl. She attended the CLaSH kindergarten. It is her third year in the hostel, which means she has little contact with her family. The family, however, can partially communicate with her. Learner 3F is happy in the hostel and she shows enthusiasm, motivation, and competitiveness in her schoolwork.

Learner 3I in the Grade 3 group is a 10-year-old girl. She did not attend the CLaSH kindergarten. It is her third year in the hostel, and she has little contact and communication with her family. Learner 3I is happy in the hostel and she is enthusiastic, motivated, and competitive with her schoolwork.

Learner 3J in the Grade 3 group is a 10-year-old girl. She attended the CLaSH kindergarten. It is her first year in the hostel, but she gets a lot of support from her mother. Her mother is attending NSL classes to be able to communicate with her daughter. Although her mother is hearing, through the NSL classes that she is attending she can interact well with her child. Learner 3J is enthusiastic, motivated, and very competitive with her schoolwork.

Learner 3K in the Grade 3 group is a 10-year-old girl. She attended the CLaSH kindergarten. It is but it is her third year in the hostel, where she is very happy. She gets a lot of support from her father and is very interactive with him. Learner 3K is enthusiastic, motivated, and extremely competitive with her schoolwork.

5.2.4 Participants performing lower in the assessments

Some participants also perform notably weaker in the assessment activities based on their scores, especially in the Written English assessment. A closer study is done on these learner's attributes. Table 10 shows the results of these learners for both NSL and Written English. This will be followed by a discussion on the individual learner's attributes.

Table 5.6: Results of lower-performing participants

	Learner	**Results of NSL /100**		**Results of Written English /100**	
		PRE	POST	PRE	POST
1	1F	24	49	11	8
2	1H	50	90	11	5
3	1I	21	35	11	10
4	2A	34	48	15	13
5	2D	51	68	7	9
6	2F	42	56	15	8
7	2K	30	63	9	9
8	2N	58	70	16	11
9	3H	38	71	8	11
10	3M	53	78	8	9

Learner 1F in the Grade 1 group is a nine-year-old boy. He did not attend the CLaSH kindergarten and lives at home with his family. This learner has a heart problem and it is suspected that he has additional disabilities. Communication with his family is very limited. He, however, showed an improvement in his NSL post-test, but showed a decrease in his performance in the Written English post-test.

Learner 1H in the Grade 1 group is a seven-year-old boy. He attended the CLaSH kindergarten. It is his first year in the hostel. This learner showed a significant increase in his performance in NSL. He improved from 50% in his pre-test to 90% in his post-test. He, however, did not perform equally

well in his Written English, as he showed a decrease in his performance from 11% in his pre-test to 9% in his post-test.

Learner 1I in the Grade 1 group is an eight-year-old girl. She did not attend the CLaSH kindergarten, but it is her first year in the hostel. It is suspected that this learner has additional disabilities. This learner was referred to the school by a psychologist, but after enrolment, she attended no further sessions with the psychologist. She showed an improvement in her NSL, as she obtained 21% in her pre-test and 35% in her post-test. She, however, performed weaker in her post-test for Written English.

Learner 2A in the Grade 2 group is a 13-year-old girl. She did not attend the CLaSH kindergarten, but this is her second year in the hostel. It is suspected that this learner suffers from Foetal Alcohol Syndrome. This learner has no connection with her mother and is taken care of by her grandmother. She has little to no communication with her family. However, she is very happy in the hostel and showed an improvement in her NSL post-test. She showed a decrease in her performance in the Written English post-test.

Learner 2D in the Grade 2 group is a 10-year-old boy. He attended the CLaSH kindergarten. He lives at home with his family and has partial communication with them. It is suspected that this learner has additional learning difficulties. He performed well in his NSL assessment activities, with 51% in his pre-test and 68% in his post-test. He, however, showed a decrease in his Written English performance.

Learner 2F in the Grade 2 group is an 11-year-old boy. He did not attend the CLaSH kindergarten, but this is his first year in the hostel. He receives constant visits from his family, but there is little communication between them. This learner was diagnosed with Cerebral Palsy. He showed an increase in his NSL performance, but showed a decrease in his Written English performance.

Learner 2K in the Grade 2 group is an eight-year-old boy. He attended the CLaSH kindergarten, and lives at home with his family. He has partial communication with his family. It is suspected that this learner has additional learning disabilities. He showed an increase in his NSL performance, but he made no progress in Written English.

Learner 2N in the Grade 2 group is an eight-year-old girl. She attended the CLaSH kindergarten. This is her second year in the hostel. She has a cochlear implant, but no intervention was received after the cochlear implant, and the implant is not regularly supplied with batteries. According to her teacher, she does not receive support from her parents. This learner performed well in her NSL assessment, with 58% in her pre-test and 70% in her post-test. However, she showed a decrease in her Written English performance.

Learner 3H in the Grade 3 group is an 11-year-old boy. He did not attend the CLaSH kindergarten this is his second year in the hostel. It is suspected that this learner has additional disabilities. He showed an increase in his NSL performance, with 38% in his pre-test and 71% in his post-test. In his Written English he received 8% in his pre-test and 11% in his post-test.

Learner 3M in the Grade 3 group is a 13-year-old boy. He did not attend the CLaSH kindergarten, but this is his first year in the hostel. He has a cochlear implant, but no intervention was received after the cochlear implant and the implant is not regularly supplied with batteries. He also has additional vision problems. This learner has been in and out of school. He attended a hearing school for a few months and was brought back to the school for deaf learners. This learner showed an increase in his NSL performance, with 53% in his pre-test and 78% in his post-test. In his Written English he received 8% in his pre-test and 9% in his post-test.

5.2.5 Supplementary learner participants

From the N=41 learner participants, three of the learners started their academic year late. This resulted in them missing the pre-intervention tests. Due to ethical reasons of not withholding any learner gaining from the programme, these learners were still included in the learning and teaching of the intervention programme. They were assessed at the end of the academic year, but no comparisons can be made with pre-intervention performance. A closer study was also done of these learners' attributes. Table 5.7 shows the results of these learners for both NSL and Written English. This will be followed by a discussion on the individual learner's attributes.

Table 5.7: Results of supplementary learner participants

	Learner	Results of NSL /100	Results of Written English /100
1	1L	90	36
2	1M	60	8
3	2O	65	5

Learner 1L in the Grade 1 group is a 13-year-old girl who was enrolled in school only late in March 2018. She had not attended any school before this time. She was placed in the hostel immediately after enrolment. Learner 1L is the oldest in her group and performs the best in her group. With earlier intervention and enrolment at school, this learner might have performed much better in her Written English assessment. A teacher noted that she showed eagerness to learn from the first day she started school. She is really enthusiastic and motivated about her schoolwork. She is a friendly learner and very happy in the hostel.

Learner 1M in the Grade 1 group is an eight-year-old girl. She did not attend the CLaSH kindergarten, but attended a different preschool for hearing learners. She was enrolled at school only late in March 2018 and this is her first year in the hostel. She is very reserved and does not interact a lot with the other learners. She has very little contact and communication with her family. Learner 1M performed well in her NSL assessment, but she is one of the weaker performers in the Written English assessment. With earlier intervention and support from family, this learner might have performed better in her Written English assessment.

Learner 2O in the Grade 2 group is a nine-year-old girl. She attended the CLaSH kindergarten. This is her first year in the hostel. She was kept at home for the whole first trimester of the 2018 school year, and she only returned to school for her Grade 2 in the second trimester. According to her teacher, her parents always bring her back late from weekends out of the hostel or school breaks. This learner performed well in her NSL test, but very weakly in her Written English test. With parental support and accountability this learner might have performed better in her Written English test.

5.3 Qualitative results

The qualitative results are presented according to the data collected from document analysis, participant and non-participant observations, field notes, interviews and the programme evaluation. The themes under discussion are in line with the programme evaluation questions. These questions were drawn up based on the research objectives and the logic model that was created as a tool to evaluate the intervention programme. Main categories that were established are: Creating a favourable learning environment through Bilingual-Bicultural instructional practices; Significant teacher attributes; Teacher support; and Parental involvement. An additional category that was established for data that could not be placed under the main categories or sub-categories is the Role of hostel matrons.

5.3.1 Creating a favourable learning environment through Bilingual-Bicultural instructional practices

This theme was derived from the programme evaluation question that pursues to determine how a favourable learning environment can be created for a deaf child to learn a language and become biliterate. In response to the above, deliberation will be given to the Bilingual-Bicultural literacy intervention programme that was implemented throughout this study.

According to Knoors and Marschark (2012:301), Bilingual Education has to be improved for deaf learners, for whom this is a suitable method of learning. They propose that these learners be given more opportunities to develop true Sign Language fluency, which is the first step toward transferring skills from Sign Language to written or spoken language. A favourable learning environment should be developed for them at a young age so that they can receive information from fluent models of both Sign Language and a spoken language (Knoors & Marschark, 2012:301). For the purpose of this study, concise deliberation was given to the suggestions that were made by Knoors and Marschark (2012). After careful consideration of the reviewed literature and analysed documents a Bilingual-Bicultural literacy intervention programme was compiled, as discussed in Chapter 4. The central aim of the intervention programme was to find applicable instructional practices to teach the Bilingual-Bicultural approach. This is also in line with creating a favourable learning environment and catering to the needs of deaf learners in Namibia.

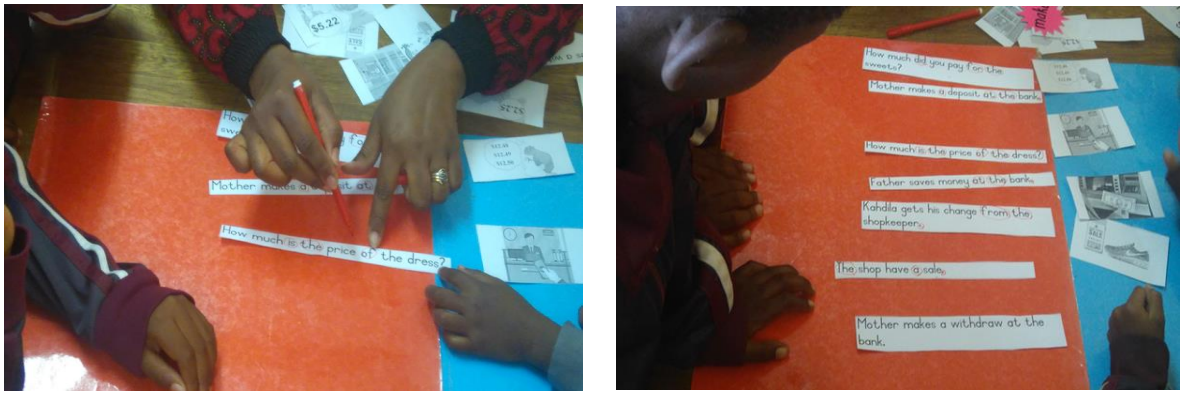
The intervention programme envisaged a systematic method of teaching deaf learners two languages at the same time. It had a dual integrated approach in that it not only integrated into a specific theme and topic for the week and several other subjects like Environmental Education, Arts and Mathematics, but it was also integrated with several skills that were taught within each language. For example, within Written English the skill of Word Building is integrated into Reading, Writing and Language Structure and within NSL the skill of Observation and Comprehension is integrated into Expression and Communication, Deaf Culture and Literatures as well as Linguistics. The programme was systematic as it aimed to teach learners NSL and Written English in small portions, adding to existing knowledge in very little pieces. Maintaining consistency and just adding new words and grammatical aspects of each language in small portions and doing revision by incorporating information that was taught repeatedly in lessons.

The aim of the programme was also always to teach Written English based on NSL. For example, new signs were first taught in NSL and thereafter the words to the signs were taught in Written English. For the learners to learn through this approach the specific words had to be repeated over and over until the learners could finally grasp the words and were able to read and write the words. As stated earlier, ten words a week were done. These were first introduced in the NSL Observation and Comprehension lesson as ten new signs for the week. The learners grasped these ten signs very easily as the signs were introduced through pictures and a signed story (the Kahdila and Martha story) for the particular week. Every time the learners looked at the pictures, they could associate the new signs with the pictures. Only after this had been done, were they introduced to the ten written words for the week in the Written English lesson. By the end of the week these words were categorised into Nouns, Verbs, Adjectives and Adverbs, as these types of words have a visual image for them and could directly be translated to NSL. The categorisation was done on four different posters. This was also done for learners to see the relation of using known words to build, read and write phrases and then eventually sentences.

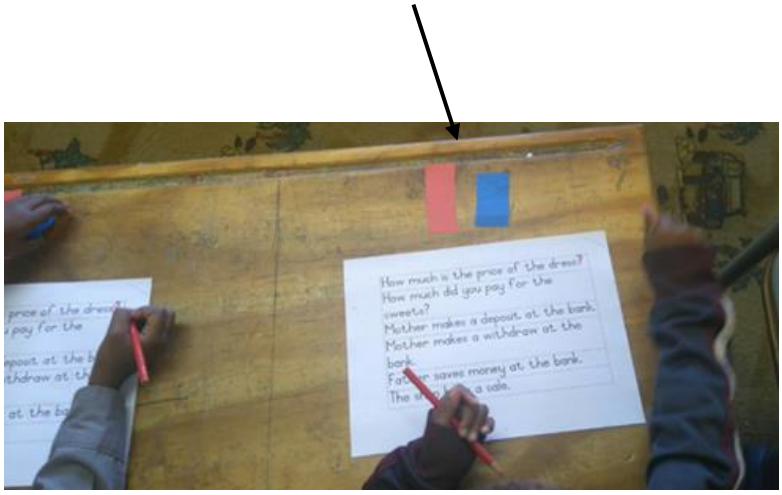
A reading text was also first signed as an observed text to the learners in NSL before it was given to them in Written English as a reading text. Grammatical aspects such as plurals were first taught in NSL and thereafter it was taught in Written English. The two languages were compartmentalised by using colour. Blue was an indication for NSL and red was an indication for Written English. Learners were taught the differences between the two languages as early as Grade one. The

teachers also continuously remind learners in the upper grades (Grades 2–3) about the language differences. By using the two colours for the two languages, Translanguaging took place in some of the lessons, especially the Written English lessons. In these lessons the learners could use whatever skills and knowledge they had in the one language to apply it to the other language. In this case the learners could use skills and knowledge of NSL and apply it to the Written English and skills and knowledge they had in Written English and apply it to NSL. According to Garcia and Cole (2014:108) as stated in Chapter 2, Translanguaging as a bilingual pedagogy is critical for making sense of language and material, as well as for building on learners' and teachers' complex and numerous language practices. Swanwick (2017:2) feels that this is a positive step toward better understanding deaf learners' language repertoires and potentials, hence improving Bilingual Deaf Education.

The teacher used a red and blue poster and if the learners felt that they wanted to express themselves in NSL to explain an English concept the teacher compartmentalised the two languages by indicating grammatical differences of the two languages on the posters. Learners thus understood NSL grammar and English grammar. A good example is the teaching of sentence structures. A learner might use an NSL sentence structure to write an English sentence. The teacher can then indicate on the blue poster that the child used the correct or incorrect NSL sentence structure and at the same time indicate to the learner how the sentence is written correctly in English on the red poster. Learners are taught NSL rules, for example, that a sentence starts with an Object, followed by the Subject and then the Verb. In English it starts with the Subject, followed by the Verb and then the Object. The two-colour posters are used to indicate the differences between these language rules. Sign Language will make more use of content words, where English will make use of functional elements as well as content words (Humphrey & Alcorn, 2007:190). The learners are taught how to identify words that are English-specific, how to make sense of a sentence using knowledge of content words, but also to look at functional elements and make further sense of the sentences. The following are pictures of how this method is used in the classroom (see Pictures 5.1 and 5.2).



Picture 5.1: Teacher using two-colour posters to teach Written English and NSL sentence structure to learners



Picture 5.2: Learners using two colours to identify content words with signs and functional elements unique to the Written English language

Morrison and Wilcox (2013:69); Kuntze et al. (2014:210) maintain that, during the pre-reading stage, children can come to realise that they live within a literacy culture and start to show an awareness of the environmental print around them, in that way becoming interested in reading and writing. What happens during these early years before children learn to read is an important factor in literacy development. Early exposure to language, books, print, and extended discourse is central to later literacy success. It is the responsibility of adults to expose children to a print-rich environment and various literacy events from an early age.

According to Singleton and Morgan (2006:355), effective teacher-learner discourse practices are regarded as critical for the joint construction of knowledge. Through social mediation, the teacher

can help the learners to make the connection with meaning through Written English. This can be done by drawing the learners' attention to print in the environment during conversations or lessons, giving meaning to printed material on the walls of the classroom. The availability of diverse writing materials (for example, markers, crayons, and pencils) is also beneficial if the teacher can persuade the learners to want to use them to communicate. By making printed and writing materials available throughout the classroom, teachers and learners can have more opportunities to interact in both languages (Kuntze et al., 2014:212).

An emphasis of the programme was also to provide an enjoyable learning environment for the learners to want to learn. The teachers were encouraged to put up posters and materials on most topics and lessons taught in the class, especially the grammatical aspects of the languages, as these were often a bit more difficult for the learners to grasp, the reason being to encourage the learners to go back to the information on the posters in a more informal manner and perhaps make better sense of what was taught. The programme envisaged that, by creating an enjoyable learning environment, it would also provide the learners with an opportunity to learn through incidental learning. The corridors were used to create such an enjoyable learning environment and to promote incidental learning. The following are pictures of examples of the corridors (see Pictures 5.3 and 5.4).

Picture 5.3: Corridors of the schools used to create an enjoyable learning environment

Picture 5.4: Incidental learning taking place as learner on her way to the bathroom studies the material on the wall

The learners were also presented with fun ways like a variety of interesting word building games and small competitions for them to learn new words. One such competition was fingerspellathons. During these fingerspellathons learners competed with one another on who can read and fingerspell the most words. This was a fun activity for the learners and they worked hard learning new vocabulary. The following are pictures of examples of word building games and the fingerspellathon (see Pictures 5.5 and 5.6).

Picture 5.5: Word-building games that learners enjoyed

Picture 5.6: A Fingerspellathon event

In line with Singleton and Morgan (2006:355); Morrison and Wilcox (2013:69); Kuntze et al. (2014:210), a reading and writing corner was established for the learners. This was done to expose the learners to a fun reading and writing environment, for reading and writing material to be readily available to the learners and for teachers to make use of as a break from the normal classroom teaching situation. Learners could be moved to the reading corner to be read to or to read and practise writing by themselves. Learners could also be sent to the reading and writing corner as an award for work that was done well, or for completing their tasks quickly. Home scholars could wait in the reading and writing corner and keep themselves busy until their parents picked them up after school. Through the researcher's participant observation, it was noted that the learners enjoyed the reading and writing corner (see Picture 5.7 for examples of the reading and writing corner).

Picture 5.7: Reading and writing corner

According to Kuntze et al. (2014:214), the fact that deaf children are visually oriented by nature has been disregarded in the history of Deaf Education due to a focus on the lack of auditory access rather than the benefits of being visually oriented. Other visual language frameworks include Sign Language, written texts, and visual processing. Visual learning is the centre of these visual processing approaches, which means learning is processed through the eye. Visual engagement strategies include visual attention, gaze behaviour, visual joint attention, and the use of pictures, illustration, drawing, print, movies, and visual media (Andrews et al., 2016:510). Early exposure to language, books, print and extended discourse is central to later literacy success. As learners are more exposed to print they will begin to make more complex mappings as they confront words or sentences that are not easily translatable to Sign Language (Hoffmeister & Caldwell-Harris, 2014:233). The main focus is thus on exposure to suitable teaching and learning material that will accommodate the needs of the deaf learner.

5.3.2 Significant teacher attributes

The theme of significant teacher attributes was derived from the programme evaluation question that endeavoured to find out how teacher attributes affect the language learning and biliteracy of

deaf learners. This inquiry was done based on the research question that seeks to find the role that teachers play in the support of biliteracy for deaf learners.

Based on the social cognitive learning theory of Bandura and the bio-ecological theory of Bronfrenbrenner, teachers play a fundamental role in a learner's development. The learning environment in schools are to a great extent prepared by the teachers in their planning, developing and managing of a social and academic environment for learning to take place (Knoors & Marschark, 2014:14). From the literature review in Chapter 3 of this study, significant teacher attributes are discussed that can affect the learning of deaf learners. These attributes are categorised as sub-themes under significant teacher attributes that emerged from the qualitative data gathered. They are as follows: the teacher's sense of self-efficacy, the type of education degree that a teacher holds, continues professional development through in-service training, the teacher's ability to communicate in Sign Language, the teacher's experience and skills in teaching deaf learners, and the teacher's relationship with the learners.

5.3.2.1 Teachers' sense of self-efficacy

Finnegan (2013:18) feels that a teacher's feeling of self-efficacy is a critical component of good teaching. The level of motivation a teacher has for his or her instructional behaviour is influenced by teacher self-efficacy. It is a teacher's belief that he or she can produce the needed changes in learner achievements. Garberoglio et al. (2012:368) state that a teacher with high self-efficacy is more open to new ideas and willing to experiment with and apply new strategies to meet a learner's needs. Such a teacher will display greater enthusiasm and skills for teaching, planning, organising and classroom management strategies. Garberoglio et al. (2012:368) continue to state that these teachers believe that they can have a positive impact on a learner's learning, even when faced with learners who may be more challenging to teach. They are less critical of their learners and demonstrate more determination in working with low-achieving learners.

From this study, the six junior primary teachers who participated all showed a positive sense of self-efficacy. All of them willingly agreed to participate in the study by signing the consent form and showing their preparedness to participate in training sessions. All of them accepted the new intervention programme and eagerly made it part of their teaching. When an interviewee from the

school management team was asked to describe the attitude of the junior primary teachers on the Bilingual-Bicultural approach to teaching deaf learners, her response was,

> *Junior primary teachers are motivated and can do it. They have the correct attitude to make a difference in the lives of our deaf learners.*

Another interviewee from the school management team stated,

> *The teachers try their best, they search the internet for ideas and even try to incorporate deaf adults in their teaching.*

During the researcher's participant observation, it was also noted that all the teachers showed positive enthusiasm and confidence to teach their learners according to the intervention programme. However, one of the six teacher participants did not feel comfortable to be visited for non-participant class observations or to take part in an interview. Teachers with positive self-efficacy play a fundamental role in the development of deaf learners. Their positive attitudes can also affect and motivate deaf learners. Knoors and Marschark (2014:15) maintain that teaching is fundamentally the support of learners in their acquisition of knowledge and what learners take away from what they are taught is also mediated by their motivation to want to learn. According to Finnegan (2013:18), teachers with low self-efficacy also play a role in how a child develops. These teachers will not expect to be successful with certain learners and are less likely to persevere with the preparation and delivery of instruction.

5.3.2.2 Type of Education degree that a teacher holds

According to Polat (2003:334), the type of education degree a teacher holds can influence their effectiveness. Teachers who have received particular training in the field of deafness may be more aware of the special needs of deaf learners (also see Ntinda et al., 2019:83). This knowledge and greater level of skills, according to Polat (2003:334), can improve a teacher's efficiency. As stated in the literature review in Chapter 3 of this study, until 2015, teachers who taught at the schools and units for deaf learners in Namibia were employed by the Ministry of Education to teach at these schools without any NSL training or training in Deaf Education. However, they did obtain some training from the NNAD. The University of Namibia has been offering NSL Education since 2011. This is offered as a major in the Faculty of Education for student teachers who wish to be primary school teachers at schools or units for deaf learners. As schools for deaf learners become

more aware of this type of training offered at the university, they require of new teachers to have this type of qualification (Bruwer & February, 2019:41).

When an interviewee from the school management was asked if the school had any criteria for employing teachers at the school, her response was,

> *Teachers must be equipped with NSL and Deaf Culture.*

Another interviewee from the school management stated,

> *The Bilingual-Bicultural approach to teaching is a good approach, but it requires a lot of work and teachers that have knowledge about this approach.*

During the researcher's participant observation, it was noted that of the six teachers who participated in the study, four teachers had university degrees, with three of the four having specialised in Deaf Education. One teacher that had been working at the school for 20 years has a teaching diploma and one teacher that had been working at the school for less than three years has a Grade 12 qualification. Half of the teachers thus have the appropriate education degree in the area of deafness that enables them to be aware of the special needs of deaf learners and that can aid the effectiveness of their teaching. During the researcher's participant observation, it was noted that these teachers also showed better competence in NSL skills and were more actively involved in following the intervention programme.

5.3.2.3 Continued professional development through in-service training

Issaka (2018:664) emphasises the need of in-service training for continuing professional growth. Professional development has generally been thought of as a set of formal, scheduled activities that bring teachers together, (Luckner & Dorn, 2017:341). This usually takes place outside of the classroom, where they can improve their teaching skills, learn new skills or knowledge, and become more familiar with changing educational policies that affect their teaching. Luckner and Dorn (2017:341) go on to say that in order for teachers to participate, they will often have to be freed during the school day, after school, or on in-service days. In-service training, according to Issaka (2018:664), is a critical component of the educational system. Teacher professionalism is important for keeping up with the pace of social and educational change and thus playing a significant role in societal behaviour.

When an interviewee from the school management team was asked what could be done to improve the academic performance of the deaf learners at the particular school, she responded,

> *Teachers must go on regular training to teach the deaf learners. It is important for teachers to know and understand the deaf child.*

When this interviewee was asked how quality education was encouraged at the school, she responded,

> *To encourage the teachers through regular team building activities and training*.

The interviewees from the school management team concurred that teachers received regular in-service training from the CCDS. During the researcher's participant observation, it was also noted that the teacher with only a Grade 12 qualification enrolled herself for further studies at the university. When another interviewee from the school management team was asked to describe his personal view on quality education, his response was,

> *Quality education starts with the teaching. Teachers must equip themselves with knowledge and understand how to work with learners. Lesson preparation must be done and the teachers must identify the levels of the different learners in the class through individual teaching and learning.*

It is evident that the school management team understands the importance of continued professional development. During the researcher's participant observation, it was noted that they showed preparedness to support any in-service training that can be provided to the teachers.

5.3.2.4 Teacher's ability to communicate in Sign Language

Namukoa (2012:52) believes in the importance of teachers' ability to communicate in Sign Language and adds that a teacher's skill to communicate in Sign Language is the ultimate characteristic of effective teaching of deaf learners. A teacher's fluent use of Sign Language in explaining concepts to deaf learners can lead deaf learners to actively engage and participate in continuous exploration and innovation in their learning (Namukoa, 2012:52).

During informal interaction with the teachers, all the six teachers who participated in the study indicated that they prefer to use NSL when they communicate with the deaf learners and all six teachers also felt that they were fluent enough in NSL to teach the deaf learners. During the researcher's participant observation, it was noted that all the teachers made a conscious effort to

present their classes in NSL. It was, however, also noted that the teachers that had formal university training in NSL were much more expressive and fluent in NSL. The teachers who did not have optimal qualifications in Deaf education, at times reverted to total communication in their teaching. They talked and signed at the same time and used a more signed English form of communication than a pure NSL form of communication. It was also noted during the researcher's participant observation that the learners enjoyed and participated more in the classes where the teachers were more expressive and fluent in NSL. In the classes where the teachers used more total communication in their teaching, the learners were less eager to participate and made more mistakes in the exercises given to them. According to Wauters and De Klerk (2014: 248), deaf learners can learn as much from a lesson as hearing learners when the lesson is taught by a teacher with good comprehension for Sign Language and has excellent skills in teaching deaf learners.

5.3.2.5 Teachers' experience and skills in teaching deaf learners

Knoors and Marschark (2014:17) advocate more experienced teachers and argue that these teachers are better able to react to events in the classroom as they have more automatised interpreting procedures. According to Knoors and Marschark (2014:17), experienced teachers are better able to accommodate greater complexity in the classroom compared to newer teachers. They are able to allocate more attention to specific individual differences among learners, allowing them to respond more effortlessly and effectively to challenges encountered by individual learners. Experienced teachers are thus able to be more effective in simultaneously leading and managing learners in the class (Knoors & Marschark, 2014:17).

The teachers from the study were a mixed group that ranged aged between 19–24 years to between 50–54 years. From the six teachers, three had been in Deaf Education between 0–3 years, two had been in Deaf Education between 4–6 years and one teacher had been in Deaf Education between 16–20 years. During the researcher's participant observation, it was noted that the most experienced teachers were not necessarily the teachers who had been teaching the longest, but the teachers who were higher trained showed more enthusiasm towards teaching deaf learners. What was also noted was that teachers with a high personal work ethic were more empowered to achieve greater success in their everyday teaching and managing of classroom events. Teachers with a lower personal work ethic easily fell behind with their work, especially due to regular teacher

absenteeism. They had less success in managing their work and classroom events. For this study the more experienced teachers were thus not necessarily those with longer involvement in Deaf Education, but those with a higher qualification and training in Deaf Education and those with a high personal work ethic.

5.3.2.6 Teacher and learner relationship

Knoors and Marschark (2014:18) state that the connection between the teacher and the learner is important. Learners with a good relationship with their teachers tend to perform well academically. They also obtain higher scores on achievement tests; they experience more positive attitudes towards school; and they interact more in the classroom. A secure relationship with the teacher is especially important to learners that do not come from a very positive home environment (Knoors & Marschark, 2014:18). Learners, especially children from hearing parents that might not experience very positive parent-child interaction, can benefit tremendously from a positive teacher-learner relationship. A positive teacher-learner relationship can be an encouraging aspect for their social and emotional development (Hermans et al., 2014:283).

What was noted during the researcher's participant observation was that the class sizes were small enough to allow the teachers to have regular one-on-one interaction with the learners. The learners felt comfortable to interact well with the teachers. When an interviewee from the school management team was asked what programme the school had in place to support the academic performance of the learners at the school, her response was,

> *We have a system where teachers should give individual support to slower learners.*

Another interviewee from the school management team responded,

> *Learning support classes are in place to build up academic strength within the learners. The majority of the time we do not see results, but we need to try even if just one or two learners improve.*

Working that closely with the learners can allow the teachers to develop good relations with the learners. Knoors and Marschark (2014:18) think that for teachers to develop a more secure relationship with their learners, they should have high expectations of their learners. The researcher posed an informal question to the teachers during the researcher's participant observation that enquired what they saw as their learners' greatest strength,

Teacher A responded,

Some are quite smart and hardworking.

Teacher B responded,

They can express themselves well in NSL.

Teacher D responded,

They are eager to learn.

Teacher E responded,

To become a good deaf adult and role model for their children.

Teacher F responded,

Their enthusiasm about their work.

All the teachers had positive prospects for their learners and all envisioned their learners to proceed to universities and obtain successful jobs.

Ntinda et al. (2019:84) comment on the importance of teacher-learners and learner-teacher communication as a major hindrance to teacher-learner interaction and relationships in the classroom. If teachers cannot communicate with the deaf learners, they cannot build a positive relationship with the learners and the learners cannot interact with their teachers. For this current study, all six the teacher participants indicated that they were good users of NSL. Through the researcher's participant observation, it was also noted that the learners enjoyed communicating with their teachers, especially the teachers that were more expressive and fluent in NSL. This further encourages positive teacher-learner relationships.

5.3.3 Teacher support

This theme of teacher support was established as a result of the programme evaluation question that endeavoured to find out how teachers can be supported to teach deaf learners. During the researcher's participant observation, it was noted that even though all the learners who participated in the study came from hearing families and although all of them participated in one programme, they were very different from one another. What was also noted was that the support that the

teachers received to teach this diverse group of learners was almost non-existent. Without real evidence or guidance, teachers were often left to presume what possible learning difficulties learners suffer from.

From the group of learners who participated in the study, 7% of the learners were assumed to be hard of hearing. According to Storbeck (2016:432), an audiological assessment can determine whether a learner is deaf or hard of hearing. Audiological assessment information was not available to the researcher, but confirmation was given by the teachers based on estimations that had been made on the learners' responses to sound. It can also not be said for certain what percentage of learners were pre-lingually or post-lingually deaf. Storbeck (2016:434) states that children may either be born deaf or they can acquire a hearing loss later in their lives. This is then classified as pre-lingually deaf; that is, before language is developed, or post-lingually deaf; that is, after language has developed. Pre-lingual deafness can be caused by maternal illness, genetic deafness, birth complications or hyperbilirubinemia. Post-lingual deafness can be caused through ear infection, meningitis, accidents and blows to the head, high fevers caused by diseases such as malaria, mumps, measles, and side effects from certain medications. Ellis (2011:6) believes that malaria and meningitis are more customary causes for deafness in Namibia. According to Storbeck (2016:434), deafness developing either before or after the acquisition of language has different impacts on the child. Based on the documents that were analysed regarding the learners' history it was evident that from the group of learners who participated in the study, 5% first attended a mainstream school and were later enrolled at the school for deaf learners. It can thus be assumed that they were post-lingually deaf or that they were incorrectly diagnosed.

During the researcher's participant observation, it was noted that learners who are assumed to be deaf or hard-of-hearing, or those who are assumed to be pre-lingually or post-lingually deaf are at different levels of language development and linguistic needs. Deaf learners ultimately need to be exposed to NSL, whereas hard-of-hearing learners need to be exposed to NSL and a spoken language. Learners that are assumed to be pre-lingually deaf need to be exposed to NSL. These learners might not have any language to start with, whereas learners that are assumed to be post-lingually deaf might already have a spoken language that can be used as a basis to teach additional language skills. What was noted during the researcher's participant observation was that no

distinction was made between these different groups of learners and the teachers had no guidance on how to cater for the different language needs of these learners.

Another variation that was noted during the researcher's participant observation was that among the learners, 32% attended CLaSH, a kindergarten that caters for deaf learners from the age of three years. At CLaSH, learners are exposed to deaf adults that teach them NSL; however, 68% had not attended CLaSH. From the group of learners who participated in the study, 78% resided in the hostel where they are exposed to an NSL environment with constant interaction with their deaf peers, while 22% lived at home with their respective families. What was noted was that no distinction was made between these different groups of learners. The teachers also had no guidance on how to provide additional support to the learners that had not attended CLaSH or were not exposed to an NSL environment like the hostel learners were.

The Gallaudet Annual Survey of Deaf and Hard of Hearing Children and youth indicates that 35-50% of deaf and hard-of-hearing learners in the USA have an additional disability or a specific learning disability (Spencer & Marschark, 2010:171). Based on the researcher's participant observation, it was noted that 56% of the learners who participated in the study showed signs of either an additional disability or a specific learning disability. However, this assessment was not made based on formal diagnostic tests.

What was also noted during the researcher's participant observation was that in the absence of formal professional evaluations and diagnostic tests of the deaf learners, many assumptions are made and no clear guidelines are available for the teaching of this heterogeneous group of learners. As stated in Chapter 2 of the literature review, it is prescribed that all schools in Namibia are expected to be inclusive schools, and all schools are expected to make provision for gifted learners, learners with physical impairments, learners with mild impairments such as low vision, mild to moderate hearing loss, mild to moderate learning difficulties, and learners with emotional and behavioural difficulties and educational lags (Ministry of Education, 2014a:6). Learning progress of these learners should then be guided and evaluated according to an individual learning plan per learner within resource units (Ministry of Education, 2014a:6).

Knoors and Marschark (2012:301) state that a bilingual environment presumes the availability of professionals in the fields that involve councillors and interventionists as well as teachers, who are

sufficiently trained and skilled in Sign Language and Deaf Education. During this study the following branches of support were distinguished that are needed to sustain teachers: Support from other professionals; Support from subject experts; Support from the School Management. These branches of support are categorised as sub-themes under the theme, Teacher support.

5.3.3.1 Support from other professionals

Teachers for deaf learners need the support of other professionals to give them advice and guidelines when drawing up individual learning plans for this varied group of learners. According to Swart and Pettipher (2016:22), collaboration among role-players in this context is essential and it means that no-one should have to handle significant challenges alone.

When interviewees of the teachers from the study were asked to explain the type of support they receive from other professionals,

Teacher B responded,

> *None, I remember we received support from an audiologist a few years ago, but currently we do not receive any support. We requested the assistance of a school counsellor, but we were told that there is only one for the region and this individual is not familiar with deafness or deaf culture.*

Teacher A responded,

> *We do not get support from them, unless you make an appointment with them to consult them. They are mostly only involved when they refer the learners to the school, as the application form of the school requires a psychologist or doctor to fill it in and make a referral.*

Teacher F responded,

> *None, but we need their support. You sometimes wonder why a learner cannot perform academically and what you as a teacher can do to support that learner. We just guess what is wrong with them, but do not know for certain.*

Teacher E responded,

> *We do not receive their support but we need it. I remember that for two consecutive years I had learners in my class that needed the support of an educational psychologist. I made appointments with the regional educational psychologist for these learners. They were always too busy and I was never given an appointment.*

For this study it is believed that evaluation reports from medical professionals, audiologists, speech therapists, educational psychologists and social workers will assist teachers to understand specific learning difficulties that learners might experience better. It will also assist teachers to take more precise decisions on learning plans and assessment strategies that need to be drawn up to cater for all learners. According to Nel et al. (2016:2), research in South Africa shows that teachers find implementing inclusive practices in their classrooms difficult, and that contextual issues such a lack of formal support systems exacerbate the problem. Nel et al. (2016:3) believe that this involves ongoing teacher training, classroom assistance, and the requisite skills from teachers to know how to seek support both within their local school community and at the district level. The South African Department of Education's policy on Inclusive Education, according to Donald, Lazarus, and Moola (2014:27), provides a wide management framework for education support services. The goal is for support teams at all levels of education to take the lead in recognising and addressing learning impediments in their immediate environment within this framework. It is planned that these teams will interact with district-based support teams. The district-based support teams' job is to provide a comprehensive and, if necessary, specialised service. Specialist support personnel such as psychologists, therapists, learning support teachers, social workers, and health workers, as well as curriculum specialists, institutional and management development specialists, and administrative experts, can all be found on these district-based support teams.

According to the Ministry of Education (2014a:36), the draft Curriculum Framework for Inclusive Education in Namibia, similar to South Africa, suggests the composition of Multi-Disciplinary Teams. These teams include the Regional School Counsellor, Speech therapist, Occupational therapist, Physiotherapist, Social Worker, Psychologist, Learning Support Coordinator, Life Skills teacher, and other medical and paramedical personnel. The composition of the members of these teams will vary from learner to learner. In order to obtain and be provided with relevant information about learners, it is the responsibility of the schools to establish communication channels with the appropriate Multi-Disciplinary Team. The responsibilities of the specialist in these teams entail the coordination of assessment. It also includes the placement and periodic evaluation on a learner’s progress, based on stipulated competencies in respective Individual Education Plans. The Multi-Disciplinary Team is then also responsible for determining suitable intervention programmes. However, at the time of data collection for the study, this document was still in draft form and not yet approved or implemented.

5.3.3.2 Support from subject experts

Based on the researcher's participant observation, it was noted that at times, teachers misunderstand the prescribed lesson objectives in the syllabi or simply fail to meet the basic objectives of lessons. Teachers will rather opt to teach the easier parts of the syllabi and ignore the sections they find difficult to teach. What was also observed was that teachers in particular struggled to teach the grammar part of Written English. To teach grammatical concepts like modal verbs and conjunctions to the learners, the teachers not only need to have a good understanding of the English language, but also a good understanding of NSL to use it as basis to teach the Written English rules. As stated earlier, Sign Language will make more use of content words and Written English will make use of functional elements as well as content words. The challenge is thus to teach the functional elements using NSL as a basis when these elements are not present in NSL. When the teachers were informally asked during the researcher's participant observation how had they taught these grammatical aspects before the intervention programme, the most common response was that they had simply left it out.

For this study it is anticipated that the teachers need the support from subject experts, as specialists of these two subjects (NSL and Written English), to make better sense of the basic competencies and lesson objectives that are prescribed in the syllabi. Teachers need continuous training on strategies to teach these context-specific parts of the syllabi. When interviewees from the teachers were asked to explain the type of support that they are receiving from subject experts, the response from Teacher F was, "*Nothing. Currently we do not even have subject advisors or experts.*"

Teacher E responded,

> *I had class visits from educational officers. They observed my class and enjoyed my lesson, afterwards they gave me some general advice on classroom administration. They could not assist me with NSL teaching or teaching deaf learners in particular.*

Teacher B responded,

> *Honestly speaking, I have not received any support from a subject advisor or expert. I rely on the support of my colleagues. If I do not know something, I will ask for assistance from them.*

In the absence of the approved Curriculum Framework for Inclusive Education in Namibia, it is currently the responsibility of Subject Advisory Teachers to provide teachers with training and

support on teaching context-specific parts of the syllabi. Swart and Pettipher (2016:22) believe that teacher support and development in inspiring improved teaching practices are more significant when it is set within the school context and addresses the everyday concerns that teachers experience. Within the Namibian context, however, there are no appointed Advisory Teachers for the NSL and Written English subjects to provide teachers with the necessary support and training. Teachers are reliant on the Chief Education Officers and HOD to provide them with curriculum support, but the Chief Education Officers and HODs are not subject experts to provide the teachers with the support they need in respect of teaching NSL and Written English as subjects.

5.3.3.3 Support from School Management

The *Collins English Dictionary* (1994) defines planning as "the process of deciding in detail how to do something before you actually start to do it". That is to think about something and how to achieve it. For this study it is implied that planning within the school context involves the process of thinking about the goal of a school and the activities needed to achieve the goals of learning. According to Swart and Pettipher (2016:21), planning entails the need to alter a culture and the way a school is organised, to establish supportable systems and structures that support improved, flexible and adaptable learning approaches. For this to be achieved successfully, principals, teachers and the school community need to be committed and must possess knowledge and skills in education change and school reform.

West-Burnham (1997:90) states that if the mission statement of a school identifies the destination of a school, then planning is necessary to specify the timetable and stops on the journey. The mission statement for the school in the current study is "to offer and sustain an effective, efficient and accessible educational service to children with hearing impairment and communication difficulty and to extend the service to the peripheral areas". According to the researcher, the main focus is then for the school, "to offer and sustain an effective, efficient and accessible educational service". West-Burnham (1997:90) believe that a school cannot attain quality management through speech if there is a lack of sincerity, meaning, and exhortation. Values can only be realised via action and management, with action taking precedence over contemplation. As a result, a mission statement can only be effective if it is part of a planning process. Planning that turns goals into action and helps each person recognise how his or her actions contribute to the school's mission is

essential. As a result, planning must combine the mission statement into a process that allows employees to strategise and prioritise their own work, ensuring that the demands of the schools and individual activity are synchronised (West-Burnham, 1997:90).

For this study it is implied that the school management team play a vital role in the execution of the plans and actions taken for the sake of learning. The teachers need the support of the school management team. When interviewees from the school management team were asked how teachers managed teaching the programmes at the school, one of the management team member's response was,

> *There is a timetable in place and teachers must keep record of what they are teaching. Management regularly do class visits and monitor the teachers.*

Another management team member responded,

> *We are monitoring the teachers to see that they are on par with the curriculum.*

Based on the researcher's participant observation, it was noted that various activities were planned during the teaching time in the mornings and fewer activities were planned for the afternoons. An example is that, at the beginning of the year, athletic practice took place in the morning and not in the afternoon. This caused major interruptions to the daily schedules of the teachers. A lot of teaching time got lost and teachers easily fell behind with their teaching. Another example is that visitors and donors of the school also opt to visit the school in the morning and not in the afternoon when no teaching takes place. Again, a lot of teaching time got lost when the learners were assembled to the hall to receive the visitors or donors.

Towards the end of terms, the teachers were forced to work under a lot of pressure to finish the required work with the learners. Teachers who did not finish with their term's work and assessment activities would squeeze all the work into limited time, or even opt to leave out some of the work. Teachers would also opt to use one full week for assessment. This is a practice that is not recommended by policy documents, which clearly state that assessment activities must be carefully planned. This should be done to spread assessment activities, like short tests and quizzes, over the term and write them during normal classes to avoid a test week or test timetable for the junior primary learners (Ministry of Education, 2014b:3). Based on the researcher's participant observation, it was noted that through small unplanned practices from the side of school

management, weeks of teaching got lost and teachers were unable to get all the prescribed work done.

5.3.4 Parental involvement

The theme of parental involvement was established from the programme evaluation question that endeavours to find out how parental involvement can affect the learning and biliteracy of deaf learners. This investigation was made based on the research question that seeks to find the role that parents play in the support of biliteracy for deaf learners.

Dostal and Wolbers (2014:247) believe that the majority of deaf learners start school without any exposure to an accessible language for acquisition (also see Alvi & Hameed, 2018:19). This is because most deaf learners are born to hearing parents who might not demonstrate the use of a Sign Language (Enns, 2006:22; Clark et al., 2020;1340). The acquisition of a language begins at home, which makes it the parents' responsibility to ensure that their deaf child is exposed to language as soon as possible, as the early years are very crucial for a child to acquire language (Steward & Clarke, 2003:148). Through interaction and discussion with their parents, children begin to learn their language at home (Knoors & Marschark, 2012:292). Bandura's social cognitive learning theory argues that learning can take place by watching other people who act as models, portraying appropriate behaviour and skills (Gray & Macblain, 2012:94). Due to the sheer frequency and intensity with which children and their parents interact, as well as the great regard children have for their parents and their desire to be like them, the parents of a child are the most powerful models in his or her life (Salkind, 2004:212).

According to Lane et al. (1995:27), the majority of deaf children of Deaf parents perform better in all academic, linguistic, and social areas than deaf children of hearing parents. Deaf children of Deaf parents who utilise natural Sign Language may have an advantage in learning a written or spoken language when compared to deaf children of hearing parents (Knoors & Marchark, 2012:293). Deaf children of Deaf parents are introduced from birth to a language-acquisition conducive environment, compared to deaf children of hearing parents who will barely share an effective mode of communication with their parents. When deaf children with Deaf parents have access to fluent language models from birth, their acquisition of written language appears to be more advanced than deaf children with hearing parents. (Knoors & Marchark, 2012:293).

According to Enns (2006:22) for more than 90% of deaf learners, the situation is quite different, as they are born to hearing parents. Hoffmeister and Caldwell-Harris (2014:239) claim that deaf children's satisfactory English reading ability is not always facilitated by having deaf parents. Based on research done, the link between Sign Language and reading comprehension is so strong that it statistically removes the advantage of having Deaf parents. What matters for reading comprehension is thus not only having Deaf parents, but having a good Sign Language input that can lead to good Sign Language skills. According to Humphries et al. (2014:36; 2019:136), studies indicate that deaf children who sign, regardless of whether their parents are deaf or hearing, achieve better in school compared to those who do not sign.

Parental involvement in the learner's school-based education programme, according to Garcia and Kleifgen (2011:182), is a significant favourable predictor of academic progress. According to Sadar and Kadir (2012:148), positive thoughts and attitudes of parents of deaf children are critical to the child's growth and development. Parents that address their child's hearing loss constructively will have a good impact on the child's self-esteem. Marschark (1997:224) maintains that research has shown that parents who spend time with their children, who facilitate their children's academic and extracurricular interests and who answer their children's questions in supportive atmospheres, foster academic excellence as well as psychosocial maturity (also see Humphries et al., 2019:136).

All the learners (N=41) who participated in the current study had hearing parents. As stated earlier, 32% attended CLaSH, where they were exposed to a deaf adult who taught them NSL from an earlier age, 68% did not attend CLaSH and only started learning NSL at the school. From the group of learners who participated in the study, 78% stayed in the hostel and 22% lived at home with their respective families. The 78% of the learners who stayed in the hostel only had interaction with their family during hostel-out weekends and school holidays. Some of the learners only went home during the school holidays. During the researcher's participant observation, it was noted that these learners only had limited communication with their parents and at times preferred to remain at the hostel, as they could communicate more easily with the hostel matrons and their peers at the hostel. Learners often referred to going home as "boring", as there is no one to communicate with. Humphries et al. (2019:136) indicate that Deaf people may feel more attached to a signing community than to a family that does not sign.

An interviewee from the school management stated,

> *It is very difficult to work with parents as parents are not involved in their children's education. Many are from farms outside Windhoek. Very few attend teacher and parent meetings.*

Another interviewee from the school management stated,

> *Some parents just want to dump their children at the hostel, because of their poor social economic situation. If we experience a problem with a child and ask parents to come to the school, many will not come themselves and might only send someone else to come. If we have teacher and parent meetings, only about 30% will show up for the meetings.*

Interviewees from the teachers were asked to describe parental involvement in their classes, Teacher B responded,

> *None.*

Teacher E responded,

> *The type of parental involvement I receive are parents picking up their children from school that are day scholars. They will ask how their children are doing or I will make use of the opportunity to have some discussions with them.*

Interviewees from the teachers were asked what support they need from parents, Teacher B responded,

> *If the parents can only get more involved with helping their children with their homework. If they can at least show some interest in asking what we are busy with at school or go through the weekly vocabulary with their children, it will also help.*

Teacher F responded,

> *I would want parents to support their children with their schoolwork. If I give a project that the child should do at home, I would want parents to assist the child in doing the project.*

Teacher E responded,

> *I want parents to learn NSL and communicate with their children. If they can communicate with their children, they will be able to help them with their homework.*

Based on the researcher's participant observation, field notes and analysis of the school register, not only a lack of parental involvement was noted, but also a lack of parental accountability

towards their children's education. It was noted that there were learners who started school at a very late age. The age recommended for Grade 1 is seven years and there was a learner who was already 13 years old when she was brought to the school a few weeks after the school year already started. The age recommended for Grade 2 is eight years and some learners were also 13 years old. The age recommended for Grade 3 is nine years and some learners were 13 years old. Two learners were enrolled in Grade 1 very late in the first trimester, which caused them to be behind the rest of the class with their learning. Three learners had been enrolled at the school previously, but they were taken out of school by their parents and brought back again two years later. These learners were either kept at home or they were enrolled at a hearing school, where they made no progress in their learning. When they returned to the school for deaf learners, they were two grades behind the rest of their peers. It was also noted that two learners who stayed in the hostel went home during the out weekends of the hostel. The respective parents of the two learners kept them at home for a month before they brought the learners back to the hostel again. It was noted that one girl in the Grade 2 group was kept at home for a whole trimester. The parents only brought the girl back to school the following trimester. It was noted that parents of the home scholars took no notice of any homework that the learners were given and that learners would return the next day with no homework completed at home.

However, the evidence presented above does not include the views of the parents. The majority of the learners stayed in the hostel with their parents residing in another town. It was thus difficult to get the views of the parents. No reasons from the parents' side could be provided for their lack of involvement or lack of accountability towards their children's education. According to Ngobeni et al. (2020:2), not many schools cater for deaf learners and those schools that do accommodate deaf learners might be far from learners' homes. Parents might also work far away from the school or they do not feel comfortable to send their young children away from home to stay in hostels. These reasons might also be applicable to this current study.

What did, however, transpire from the researcher's participant observation was that parents of three learners were very involved. These parents tried their best to assist their children. Two of the mothers attended NSL classes to be able to communicate with their children. These learners appeared very motivated in their learning and were very competitive amongst their peers. They also showed great performance in their schoolwork.

According to Knoors and Marschark (2012:294), hearing parents can and also do learn native Sign Language. Even if it is difficult for these parents to instantly provide a rich, fluent, and consistent language model, deaf children whose parents support early development using signs appear to have linguistic, social and academic advantages during early years (Knoors & Marschark, 2012:294). Research done by Sardar and Kadir (2012: 149), in line with Knoors and Marschark (2012), found that deaf children's self-esteem may be influenced by the parents' attitude. Their research also indicates that deaf children whose mothers can communicate with them have higher self-esteem scores than those whose mothers cannot communicate with them. Parental involvement and communication are thus important factors in the educational development of the deaf child (also see Humphries et al., 2019:136).

5.3.5 The role of hostel matrons

An additional category that was established from the key categories of the qualitative data was the role hostel matrons played in the development of the deaf learners. Bronfenbrenner states that a child's development should be studied not only in the home, but also at the school and in the community where the child lives (Doherty & Hughes, 2009:43). Rosa and Tudge (2013:246) continue to state that the microsystem in which the child functions is the most proximal setting in which a person with particular physical characteristics is situated. This for a deaf child is thus not only their family, but also their friends, teachers and hostel matrons. Swart and Pettipher (2016:14) reason that it represents the environment where children primarily learn about the world and it is represented by individuals the closest to them. For the 78% of the deaf learners from this study who resided in the hostel, the hostel matrons represented the adults who are the closest to them.

The hostel matrons who take care of the learners at the hostel were between the ages of 45–49 and 50–54. They had been working with the deaf learners between 16–20 years and 20+ years. Their qualifications were all below a Grade 10 level and none of them had formal training in NSL or Deaf Culture. They did, however, receive some informal training in NSL from the NNAD. They all felt that they knew quite a bit of NSL, but they preferred to use total communication with the deaf learners. They were always more than willing to have informal discussions with the researcher on how they could assist the learners with schoolwork in the afternoons.

When the hostel matrons were informally asked what their greatest fears or concerns were regarding the learners' future, the one matron's response was,

> *My greatest fear is when they will leave school and have to stay home without signing.*

Another matron responded,

> *My fear is that they will drop out of school and this will lead them to make wrong friends.*

During the researcher's participant observation, it was noted that the emotional and moral support that the learners received from the hostel matrons plays a significant part in their development. They communicate with the learners as adults and the learners are constantly surrounded by a signing environment. The learners are amongst adults, friends and peers who are deaf and signing, and with whom they can communicate.

According to Singleton and Morgan (2006:334), through interaction and increasing participation as members of their community, in this case the deaf learner community, learners' identity develops (also see Stander & Mcilroy, 2017:93). Not only does their identity develop; their communication skills also develop, as they constantly communicate with hostel matrons and peers. Calderon (2000:141) claims that deaf learners with greater language and communication skills perform better academically. Calderon (2000:141) goes on to say that there is considerable evidence linking socio-emotional development or social competence to academic success. When deaf learners achieve higher levels of socio-emotional competence and language and communication abilities, they improve their reading scores, make better use of classroom teaching time, and solve social and academic problems more effectively (Calderon, 2000:141).

Whereas Knoors and Marschark (2014:18) argue that children from hearing parents who might not experience very positive parent-child interaction can benefit tremendously from a positive teacher-learner relationship, the notion of this study is that the same can be argued for a positive hostel matron-learner relationship. What was noted in this study was that of the nine learners who were identified as higher-performing learners in the diagnostic assessments, eight resided in the hostel and only one was a home scholar. Through informal discussions with the teachers the researcher enquired about the involvement of the hostel matrons in the lives of the learners. The response from Teacher B was,

> *I am not involved at the hostel, but my colleagues told me that the hostel matrons are very committed to sit with the learners and do revision of the work that was done at school.*

Teacher E responded,

> *The hostel matrons are a great support to the deaf learners. We all should learn from them on how to support and be involved with the learners. They have rules and they teach learners about life. If a child acts out, they will use the opportunity to talk to the child. I know one matron that is like that. She has also been at the hostel the longest. Everything she does with the learners is for them to gain life experiences.*

Teacher F responded,

> *At the hostel the matrons make the learners do extra work during study time. I even saw them paste some work that the learners do at school on the walls of the dining hall for learners to revise.*

Teacher D responded,

> *The hostel matrons help the learners where they can.*

What was observed during the researcher's participant observation was that in the absence of parents who are not readily available, hostel matrons fill a huge gap in the socio-emotional and academic support needed by the deaf child. From the responses of the teacher participants it is eminent that the role hostel matrons play in the lives of deaf learners cannot be ignored. However, when the researcher asked members from the school management what support was provided to the hostel matrons, a response from one member was,

> *This is something to consider, we sometimes focus too much on the academic side that we neglect our hostel matrons.*

Ngobemi et al. (2020:2) emphasise the importance and value of caregiver attention and support to deaf learners. Stander and Mcilroy (2017:87) further elaborate on how the hostel environment for the deaf learners allows them to participate in a Deaf community where they learn Sign Language and Deaf culture from one another and form a Deaf identity. What was observed during the researcher's participant observation and through informal discussions with the hostel matrons it was noted that the hostel matrons understood the deaf learners and they understood Deaf culture. They also understood the academic and social struggles that deaf learners face. They know the history of each child in their care, as they have first-hand interaction with the parents of these

learners when they drop off or pick their children at the hostel. Even though they are not deaf themselves, based on their knowledge and understanding they offer the necessary support and motivation that these learners require.

5.4 Results from consolidated data

The results from the consolidated data from both the quantitative and qualitative data are presented next. The two themes that derive from the consolidated data are Teachers' Improvement from the Bilingual-Bicultural literacy intervention programme, and the Impact of the Bilingual-Bicultural literacy intervention programme on the language learning and biliteracy of the deaf learners. The themes under discussion correspond to the evaluation questions that were developed based on the research objectives and the logic model that was designed as a tool for evaluating the intervention programme.

5.4.1 Teachers' improvement from the Bilingual-Bicultural literacy intervention programme

This theme was derived from the programme evaluation question that endeavours to find out how teachers can gain from the Bilingual-Bicultural literacy intervention programme. This investigation was made based on the research question that seeks to find the role that teachers play in the support of biliteracy for deaf learners.

As stated in Chapter 2, in Namibia a lot of time and effort are spent on the inclusion of the deaf child and the recognition of NSL, the Deaf Community and Deaf Culture. It leaves Bilingualism in Deaf Education as an unacquainted tactic in schools for deaf learners. It is prescribed and advocated in policy documents, but teachers remain ignorant of this approach of teaching.

According to Polat (2003:334), professional training in the domain of deafness can help teachers become more aware of the special needs of deaf learners. This knowledge, as well as a higher degree of expertise, can help the teacher achieve more success in the classroom. Issaka (2018:665) concurs that the teacher's knowledge of the content that needs to be taught may influence the deaf learners' academic achievements. According to Polat (2003:334), teachers' knowledge of deafness, deaf individuals, and deaf learners' education is linked to more positive views toward their learners. To effectively educate deaf learners, teachers need a diverse set of specific teaching abilities and

approaches for bridging the gap between sign and spoken/written languages for the development of bilingual literacy in a bimodal setting (Swanwick, 2016:29).

The Bilingual-Bicultural literacy intervention programme provides the teachers with an applicable instructional practice for teaching the bilingual approach. The programme is very prescriptive and teachers receive intensive training (as stated in Chapter 4) on how to teach the programme. The goal of the training provided to the teachers is for them to gain knowledge and skills on how to prepare and present lessons to a deaf learner, based on the Bilingual-Bicultural approach. The goal is also for the teachers to become familiar with how to prepare teaching materials and a learning environment to accompany their lessons. Lastly, this serves that they gain information on how to align their assessment activity for the benefit of what is taught and the level of the learner whom it is taught to.

Following is a presentation and discussion on the specific teachers' gains and improvement that were assembled from consolidated data of both quantitative and qualitative data. These are categorised as sub-themes under the theme, Teachers' improvement from the Bilingual-Bicultural literacy intervention programme.

5.4.1.1 Lesson preparation and presentation

The adapted integrated lesson plans, as stated in Chapter 4, that were drawn up for the Bilingual-Bicultural literacy intervention programme have a very prescriptive manner of teaching. Teachers have to receive training to understand how to prepare and present their NSL and Written English lessons. The programme requires of teachers to teach from the basis of NSL to Written English. For each new topic the teachers are required to start with the NSL lesson first in order for the learners to grasp concepts better in a language that is more natural to them and then proceed to teach the Written English component. In most cases the lessons run parallel, meaning that the same concepts that are taught in NSL are also taught in Written English.

The teachers were provided with material and information as far as possible and as much as possible to sustain and feed their teaching. From the researcher's participant observation, it was noted that the teachers showed motivation and enthusiasm to have a new instructional practice they could follow. It was also noted that half the teachers showed willingness even to do extra work on the programme. During the researcher's non-participant observations, it was noted that in

four of the ten lessons observed, the teachers taught exactly according to the prescriptions of the programme. In four of the lessons the teachers were more innovative and they personalised the prescribed lessons, only using the accommodating materials of the lessons. In two of the ten lessons observed, the teachers still showed some confusion as to how they should teach. For these lessons the teachers were provided with further assistance and guidance. From the NSL lessons that were observed, four of the five NSL lessons had very positive outcomes, indicating that the learners understood what was communicated to them and they were eager to respond to the instruction given to them. The positive learner responses to the NSL instructional practices also reflected in the results of the post intervention test that showed an average score of 70 out of 100.

From the Written English lessons observed, the learners responded well to four of the five Written English lessons. However, all the lessons that were observed were on Word Building and Finger spelling. The notion of this study is that teachers might still not feel comfortable to display their ability in teaching the other Written English skills to the learners. The challenge for teaching and learning of Written English was also noted in the results of the post-intervention test. It showed an average score of 28 out of 100, which is not nearly comparable to the average of 70 out of 100 in NSL. However, an improvement of 12% in the total average performance of the learners were noted in Written English, which showed that some learning had taken place.

Interviewees from the teachers were asked how the intervention programme benefited them. Teacher F responded,

> *I benefit from gaining knowledge on how to teach Written English to my learners. Before the programme it was a struggle to teach the learners how to read and the grammar of English. Now I understand more about how to teach the deaf learners.*

Teacher B responded,

> *For me it was something very good. Before the programme we did not really know how to teach the deaf learners. During the intervention programme we receive clear direction and guidance on how to teach them. Now it is clear and we understand better.*

The evidence presented indicates that the teachers gain knowledge and a better understanding of how to prepare and present their NSL and Written English lessons. They now understand how to teach NSL as basis for teaching Written English. Some reflection was needed on their own methods of teaching and it is now clear to them that they cannot teach deaf learners the same as they would

teach hearing learners. The teachers now understand the language needs of their deaf learners better.

5.4.1.2 Preparation of a learning environment and materials

The researcher worked with the teachers on a regular basis developing teaching materials in the form of posters and other fun methods to use in their teaching. The researcher encouraged the teachers to put up posters and materials on most topics and lessons taught in the class, especially the grammatical aspects of the languages, as these were often somewhat more difficult for the learners to grasp. By doing this the learners are presented with an opportunity to go back to the information on the posters in a more informal manner and perhaps make better sense of what was taught. Through the Bilingual-Bicultural literacy intervention programme a lot of focus is placed on creating a learning environment. The researcher used the corridor of the school to demonstrate to the teachers, how they could create a learning environment within their own classrooms and so also promote incidental learning among the learners.

During the researcher's participant observation, Teacher D shared her experience of the pleasure the learners showed regarding the materials on the walls of her classroom,

> *In the morning before school starts or whenever they (the learners) have free time, they will go to the words and poster on the walls. One girl that remembers the work very well will pretend that she is the teacher and explain the work to the others. They especially love to do the vocabulary. There they would take turns in asking one another what the signs are for the various words that they would point to. For me this is good as it keeps them busy when I have something urgent to do or when I need to step out of the classroom.*

Teacher E noted,

> *The learners will go to the classes of my colleagues and look at the material on the walls, they will copy words that they do not understand and come and ask me to explain the meaning of these words to them.*

What was, however, noted during the researcher's participant observation, was that not all the teachers displayed learning materials on their walls, and not all the teachers regularly changed the learning materials on the walls or in the class to fit the more recent concepts taught. For some it became a more decorative tactic than a learning and teaching tactic.

Interviewees from the teachers were asked to describe a favourable school environment for deaf learners to become biliterate, Teacher B responded,

> *I think the learners should enter a class that has a lot of visual aids and concrete objects that can capture their interest and attention on things that they want to talk about.*

Teacher D's response was,

> *I want to use more visual aids and I want to change the visual aids regularly so I can keep the interest of my learners. I also want my learners to go out on more excursions to gain more real-life experiences.*

Teacher E 's response was,

> *The learners need to be exposed to a Sign Language environment. I need more support from the Deaf assistant teacher. Through him I can make a better connection with the learners. When I get stuck with NSL I can get his assistance.*

Teacher F responded,

> *We need notice boards everywhere on the school premises, where we can expose the learners to information in picture form and writing. We need to label everything around the school so they can discover new words everywhere on the school premises.*

Teacher A responded,

> *Learners enjoy signed stories. We need to expose them to more signed stories.*

Kuntze et al. (2014:204) think that the slow progress in reading development for many deaf learners can be because of the limited opportunity and insufficient support systems for learning to read through visual means. According to Kuntze et al. (2014:204), strategies of using Sign Language to help print come alive with meaning or merging Sign Language, and print in interaction with the deaf learners are methods that are seen as Translanguaging. Translanguaging is a pedagogical means of moving between Sign Language and Written English to bring about better understanding (O'Neill, 2017:7), creating a rich communicative environment in which learners are given access to numerous individuals who can communicate with them, and an opportunity to discuss a wide range of topics and making a connection to English print. The notion of this study is that the teachers have now gained an understanding that their learners are by nature visually orientated and they comprehend the importance of creating a visual environment to

provide better access to language learning, incidental learning and peer teaching. This, however, was not always done appropriately to fully benefit the learners.

5.4.1.3 Compiling assessment material

Assessment, according to Steward and Kluwin (2001:217), is an unavoidable part of teaching. It is done so that teachers may get an idea of how well their learners are progressing. It can also be used to evaluate how well a subject was taught. Teachers assign percentages and marks based on their evaluations and include comments on report cards about the learners' accomplishments. However, teachers must constantly ask themselves what the grade on a report card really tells a learner or a parent (Steward & Kluwin, 2001:217). As stated before, assessing deaf learners is not easy (Knoors & Marschark, 2014:83). Overall, language grading is difficult, time-consuming, and necessitates a significant amount of mental and emotional work on the part of the teacher. It's challenging because of the necessity for fairness, the importance of assessing bias, and the need for uniform criteria (Steward & Kluwin, 2001:217).

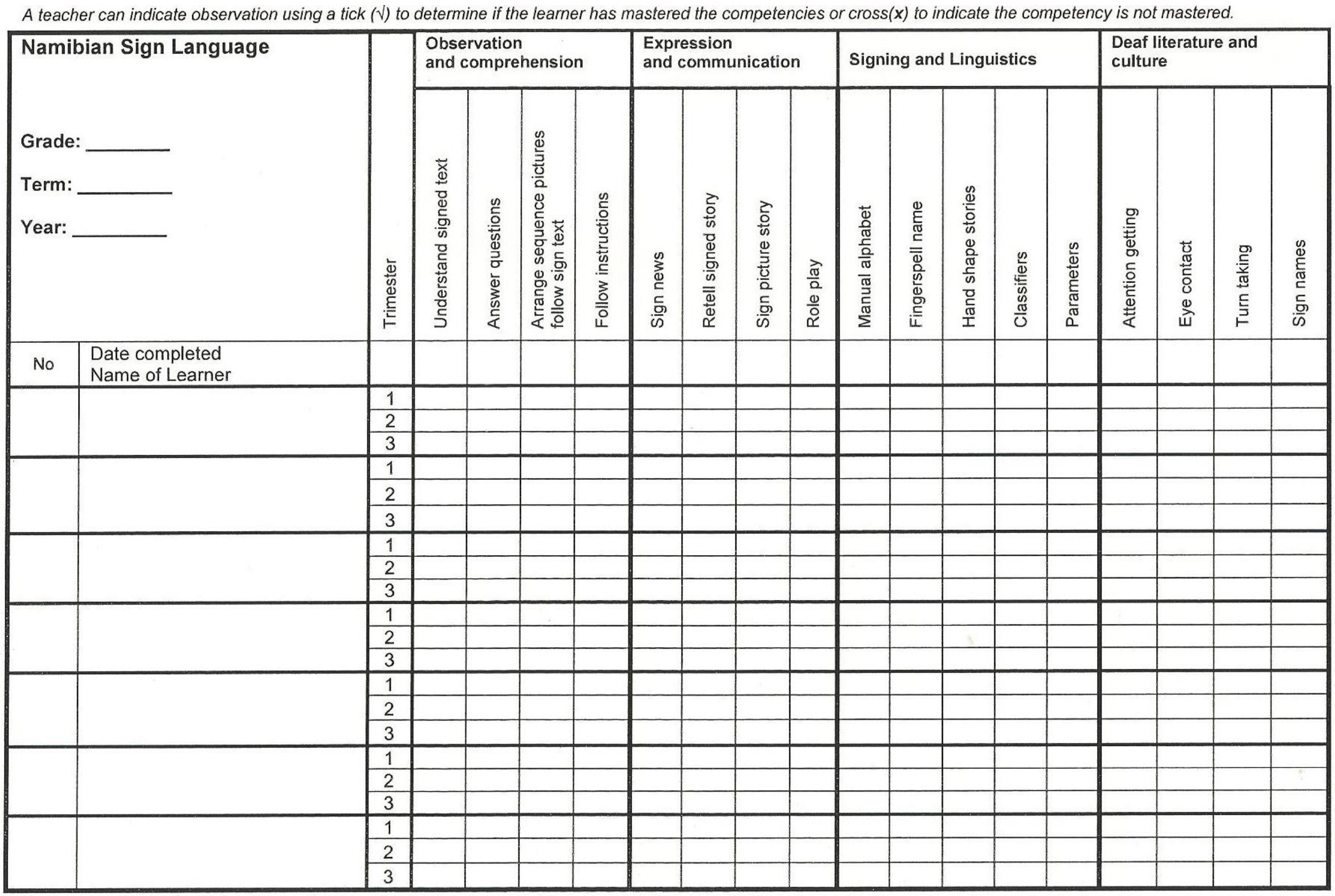
The purpose of providing training in NSL and Written English assessment in the evaluation programme for this study was to bring about a better understanding of what assessment entails and the reasons for conducting NSL and Written English assessments. Based on data collected through document analysis it was found that prescribed procedures in respect of assessment are already provided to the teachers by the Ministry of Education Arts and Culture in the continuous assessment record books for the Junior Primary Phase. Informal observation checklist and formal assessment record forms are provided for all subjects. According to the Ministry of Education (2014b:3), the informal observation checklist that is provided consists of the components and competencies of the subject (see Figures 5.2, 5.3, 5.4 & 5.5). It should be carried out in the classroom, through attentive observation of learners engaged in course activities and their written output. Assessment activities must be planned as part of the class, and clear assessment criteria must be established. Teachers can, through the observation of the learners, indicate using a tick (√) to determine if the learner has mastered the competencies or cross (x) to indicate that the competency is not mastered. According to the prescribed procedures, no marks should be entered for informal assessment (Ministry of Education, 2014b:3).

In following the procedures from the Ministry of Education the teachers for deaf learners can focus on the strengths and weaknesses of the deaf learners and can engage in a diagnostic language teaching method. Diagnostic teaching, according to Knoors and Marschark (2014:83), is a type of instruction in which the assessment of abilities, progress, and programme planning are constantly intertwined. This can be done on an individual basis as well as in a classroom setting. As a result, the assessment's objective is to provide direction. As stated earlier, teachers are provided with teaching manuals that include lesson plans for the language skills and worksheets. These worksheets can be used as assessment activities in support of the observation sheets that are provided by the Ministry of Education. Based on the performance of the learners, the teachers can determine how they can make the necessary changes to their teaching in order to bring about better performance and understanding to their learners.

According to the Ministry of Education (2014b:3), formal assessment should be done after the conclusion of a topic or particular concept. It is suggested that teachers can give short written tests, quizzes or oral tests over the term. The assessment activities must be carefully planned. Only two formal assessments will be recorded from the many assessments conducted. At the end of each trimester, the average grade for the two formal assessments will be calculated, and the summative assessment grade for each term will be determined. The summative grades from the third trimester will be used to determine the promotion grade at the conclusion of the year. Formal continuous evaluation activities such as short exams or quizzes, according to the Ministry of Education (2014b:3), should be spread out over the term and written during regular sessions. This is done to ensure that no Junior Primary Grade 1–3 classes have a 'test week' or a 'test timetable' during which learners must study for tests. Next follows examples of the informal and formal assessment forms for Namibian Sign Language and Written English as prescribed by the Ministry of Education Arts and Culture (see Figures 5.2, 5.3, 5.4 & 5.5).

What can be noted in the NSL Informal Observation Checklist (see Figure 5.2) and the NSL formal assessment record form (see Figure 5.3) is that the four language skills for NSL are catered for (Observation and Comprehension, Expression and Communication, Signing and Linguistics, Deaf Literature and Culture. This is the same as was done in the new adapted IPMs (Integrated Planning Manuals) that were compiled for the intervention programme, as discussed in Chapter 4. The same can also be noted in the Written English Informal Assessment Checklist (see Figure 5.4) and the

Written English Formal Assessment Record Form (see Figure 5.5). The four language skills for Written English as provided for in the new adapted IPMs (Word Building and Finger Spelling, Reading, Writing, Language Structure Grammar and Language use) are also provided for in these forms.



*A teacher can indicate observation using a tick (√) to determine if the learner has mastered the competencies or cross(**x**) to indicate the competency is not mastered.*

Namibian Sign Language **Grade:** ________ **Term:** ________ **Year:** ________		Trimester	**Observation and comprehension**				**Expression and communication**				**Signing and Linguistics**					**Deaf literature and culture**			
			Understand signed text	Answer questions	Arrange sequence pictures follow sign text	Follow instructions	Sign news	Retell signed story	Sign picture story	Role play	Manual alphabet	Fingerspell name	Hand shape stories	Classifiers	Parameters	Attention getting	Eye contact	Turn taking	Sign names
No	Date completed Name of Learner																		
		1																	
		2																	
		3																	
		1																	
		2																	
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Figure 5.2: Namibian Sign Language Informal Observation Checklist Grade 1–3 (Ministry of Education, Arts and Culture, 2014b:18)

Namibian Sign Language									Grade: _____									
Term: _____		Formal Assessment 1							Formal Assessment 2							Term Mark		
Year: 20_____		Observation and Comprehension	Expression and Communication	Signing and Linguistics	Deaf Literature and Culture	Total	Average	Grade	Observation and Comprehension	Expression and Communication	Signing and Linguistics	Deaf Literature and Culture	Total	Average	Grade	Total Ass 1+2	Average	Grade for trimester
Marks Allocated		5	5	5	5				5	5	5	5						
No.	Date Completed ⟶ Name																	

Figure 5.3: Namibian Sign Language Formal Assessment Record Form (Ministry of Education, Arts and Culture, 2014b:19)

*A teacher can indicate observation using a tick (√) to determine if the learner has mastered the competencies or cross(**x**) to indicate the competency is not mastered.*

Grade____

Term: ____

Year: 20___

		Assessment 1					Assessment 2				Assessment 3			
		Trimester	Word Reading & Finger Spelling	Reading	Writing	Language Structure	Word Reading & Finger Spelling	Reading	Writing	Language Structure	Word Reading & Finger Spelling	Reading	Writing	Language Structure
No.	**Date observed ⟶ Name**													

Figure 5.4: Written English Informal Assessment Checklist Grade 1–3 (Ministry of Education, Arts and Culture, 2015:18)

Written English									**Grade: _____**
Term: _____ **Year: 20_____**		**Formal Assessment : _____**							
		Word Reading & Finger Spelling	Reading	Writing	Language Structure	M/S Activity	**Total**	**Average**	**Grade for Term**
Marks allocated									
Date Completed ⟶									
No.	**Name**								

Figure 5.5: Written English Formal Assessment Record Form Grade 1–3 (Ministry of Education, Arts and Culture, 2015:20)

The researcher used what was prescribed by the Ministry of Education Arts and Culture regarding the assessment of junior primary learners and worked with the teachers on the type of assessment techniques and/or instruments they can use during their formal assessment activities. The focus was on language skills and to set assessment tasks that catered for the various levels of learning. This means all learners should at least be able to do some parts of the assessment activities. In order to make the assignment of marks easier for the teachers, it was best to draw up criteria guides to assist in assessing skills such as Expression and Communication in NSL and Reading and Comprehension in Written English. This way the teacher can ensure that they conduct fair assessment to all the learners.

During the researcher's participant observation, an interviewee from the school management noted,

> *This new method of assessment will assist the school management to keep track of learners' performance, as the teachers can now provide clear evidence on how assessment was done and how they got the marks that they allocate to learners. We now no longer have to be afraid of 'ghost marks', where teachers just assign any marks to learners without it providing a true reflection of their performance.*

Based on the researcher's participant observation, it was noted that half the teachers became more aware of what they assessed and how they assessed it. They made use of the activities that were provided as class activities in lessons that were prepared for the intervention programme (see Chapter 4), as informal assessment activities. They also used these activities as the basis for drawing up the more formal assessment tasks.

Teachers voluntarily approached the researcher to present and discuss their assessment tasks. Informal, but comprehensive discussions were conducted about the best applicable assessment activities and marking guides to be drawn up. The teachers also started with an initiative of compiling assessment files for the different grades that can provide direction for future assessment activity tasks that need to be compiled. It is the notion of this study that through continuous interaction and discussions on composing assessment material for deaf learners, a better understanding can be gained by the teachers on the topic, and better assessment tasks that cater for the needs of the deaf learners can be compiled.

5.4.2 Impact of the Bilingual-Bicultural literacy intervention programme on the language learning and biliteracy of the deaf learners

A lot of research indicated that deaf learners in general have much lower reading comprehension, literacy skills, and overall academic success than hearing learners (Qi & Mitchell, 2012:14; Van Staden, 2013:306; Hrastinski & Wilbur, 2016:156; Alvi & Hameed, 2018:18; Mayer & Trezek, 2019:8). Deaf learners have a difficult time learning to read. The relationship between deafness and low English literacy skills is complicated, and factors such as language proficiency, academic accomplishment, cognitive capacities, and family background, as well as the way reading proficiency tests are organised, all have a role (Hrastinski & Wilbur, 2016:157). Conversational proficiency in either a spoken or signed language is rare among deaf learners. This means that, when compared to hearing children, deaf learners lack the necessary vocabulary, sentence building skills, and world knowledge when they begin learning to read (Hrastinski & Wilbur, 2016:157).

According to Knoors and Marschark (2012:292), there is a necessity, or at least a social desire, for deaf children to finally integrate fully into society. This means, among other things, having the best possible reading and writing skills. A Bilingual Education approach, according to Knoors et al. (2014:2) and Swanwick (2016:3), provides a deaf learner with not just the opportunity to learn Sign Language and a spoken or written language, but also access to the curriculum in the language that is most accessible to them, and in a setting that honours deafness, Sign Language, and Deaf culture. One goal of most Bilingual Deaf programmes, according to Knoors et al. (2014:2), is to encourage the acquisition and learning of a first language by providing an accessible Sign Language. Another goal is to incorporate Sign Language, Deaf culture, and Deaf professionals into education in order to improve deaf learners' social and emotional development in general and their identity development in particular, as well as to improve second language proficiency through reading and writing, as well as to promote academic achievement. The Bilingual-Bicultural literacy programme that was implemented in this study had similar intentions.

The current theme under discussion forms part of the key research objective, which was to determine how the biliteracy skills of deaf learners can improve after the application of an intervention programme. The investigation was extended to the programme evaluation pursued to determine the impact of the Bilingual-Bicultural literacy intervention programme on the learning and biliteracy of deaf learners.

When interviewees from the teachers were asked how the learners benefited from the Bilingual-Bicultural literacy programme, Teacher A responded:

> *It is as if a shield was lifted from their eyes. Words now have meaning for them.*

Teacher B responded,

> *The learners are now motivated to read. Before words were just words to them. Now the words have meaning. They always see new words and want to know the meaning of the words.*

Teacher D responded,

> *The learners benefited a lot. They can now read and write words and they know about sentences. Everything they draw, they want to label to explain more about their drawings. They see a new word and they want to know what the meaning is for the word.*

Teacher E responded,

> *I used to struggle to get them to just copy a sentence properly from the board. Now they know that a sentence must start with a capital letter and end with a full stop. They know names of people must be written with a capital letter and they apply it in their writing.*

Teacher F responded,

> *The learners are now more interested and eager to learn, they even want to come to class in the afternoon to come and learn. The bigger grades get jealous because the junior primary grades know more words than they do. They ask why we did not teach them so many words. They also start to copy the junior primary grades by coming to us and ask for the meaning of words.*

Based on the researcher's participant observation and non-participant observation, a change was noted in the learners' attitude towards their approach to NSL and Written English. During NSL lessons they watched stories and poems signed by Deaf adults on videos. They would practise signing the poems afterward and sign it over and over. The learners enjoy signing the poems. Before, the programme learners had not been exposed to NSL poetry. By exposing them to poetry and signed literature, they became more aware of how they signed their own stories. They imitated the Deaf adults telling the stories in the videos by using more classifiers, locatives and facial expressions. The learners are no longer afraid to give their opinion in class using NSL. They feel

confident enough to challenge the teacher during class discussions. They raise their own opinions and arguments on topics. The learners act with more self-confidence in doing their work.

During a non-participant classroom observation, it was noted that a teacher arranged a word building competition among the learners. She grouped them in two groups and the two groups had to compete. The stronger learners immediately took ownership in arranging their groups. The weaker learners had to look for the letters of the words and the stronger learners would build the words. The teacher stated that before the programme she could not use such groupwork activities, as learners were not eager to work in groups and also did not understand the concept of groupwork.

The immense improvement that was noted in the NSL use and confidence of the learners was also noted in the pre- and post-intervention test that were conducted. All the learners showed an improvement from the pre-intervention test to the post-intervention test; some more than others. The biggest improvement was noted in the acquisition of new signed vocabulary. Less improvement was noted in the arranging of picture stories in chronological order. However, the Grade 3 group showed a good improvement in this regard, with an average score of 5 out of 20 in the pre-test and an average score of 15 out of 20 in the post-test.

An improvement was also noted in the use of Written English and confidence of the learners in Written English. The programme started by first exposing the learners to vocabulary. This is a gradual build-up as the learners progress through the years. Every year they learn more vocabulary. It was a bigger challenge for the Grade 1 group of learners, as it was their first year of formally being exposed to the written form of words. The learners who did not attend the pre-grades still had to learn the basics of writing letters and words. The teachers had to give these learners additional attention. As the grades progressed it became easier for the teacher and the learners. It appeared that Word Reading was easier for the learners than Fingerspelling and writing the words. It was, however, noted that the learners progressed in these skills as the grades progressed.

The Grade 3 group put in more effort into fingerspelling and writing the words than the lower grades did. The lower grades were mostly happy with being able to identify and read the words. As the learners became more familiar with words, the teachers could show them how to build phrases from the words that they know. The teachers could also show them how to read sentences

by identifying words that they know in a sentence and then try to make sense of the sentences. This task was more successful with some Grade 2 learners and the Grade 3 group of learners.

Based on the researcher's participant observation and non-participant observation, it was noted that it was much more challenging for the Grade 1 group of learners to learn according to the programme. The teachers had to lay the foundation and establish the basics of the programme to the learners. The learners had to adapt to learning NSL and Written English at the same time. Dostal and Wolbers (2014:247) and Alvi and Hameed (2018:19) state that the majority of deaf learners start school without any exposure to an accessible language for acquisition. This is because most deaf learners are born to hearing parents who might not demonstrate the use of a Sign Language. This is an indication that many deaf learners start school without an expressive language that can be used for communication or learning (Dostal & Wolbers, 2014:247; Alvi & Hameed, 2018:19).

By the end of the academic year and the intervention programme, all the learners showed an improvement in their NSL literacy skills. The Written English skills, however, remained a challenge, with only nine learners who scored 40% and above in their post-intervention test. Of these learners, two were in the Grade 2 group and seven were in Grade 3. The learners in the Grade 3 group showed progress in being able to build, read and write simple sentences with the guidance of the teacher. These learners also showed the ability to read short paragraphs and extract information from these short paragraphs. The learners expressed motivation to want to read. According to Daly III et al. (2015:151), the main reasons for reading are to gain knowledge, for personal enjoyment, and to facilitate the ability to learn independently. Learners who read quickly and with comprehension are likely to choose to read more, and thus read more frequently. With more frequent reading they will become more skilled readers.

5.5 Summary

Chapter 5 provided a detailed presentation, analysis and discussions on the implementation of a Bilingual-Bicultural literacy intervention programme. The data were presented and discussed in accordance with the outcome of a programme evaluation within a multi-method research. The quantitative test, NSL Assessment and Written English Assessment, presented a bigger improvement in the learners NSL skills than in their Written English skills. However, an

improvement was noted in the learners' Written English skills as the grades progressed. Moreover, *t*-tests were calculated to determine if the results were statistically significant. The statistical analyses demonstrated significant results ($p < 0.05$), with regard to the total scores and all the sub-tests for NSL as well as Written English skills.

The qualitative data presented five categories with sub-categories. The Bilingual-Bicultural literacy programme that was implemented was presented and emphasis was put on means of creating a favourable learning environment through Bilingual-Bicultural instructional practices. Significant teacher attributes that can affect the literacy of deaf learners were presented and discussed individually. Different support systems that teachers need to teach deaf learners more effectively were identified, analysed, presented and discussed. Parental involvement and the role that hostel matrons perform in the literacy of deaf learners formed part of the discussion on the qualitative data.

From the consolidated data of both the quantitative and qualitative data, two matters were analysed, presented and discussed. The first was the teachers' improvement in using the Bilingual-Bicultural literacy intervention programme and the second was the impact of the intervention programme on the language learning and biliteracy of deaf learners. The next chapter, Chapter 6, will summarise key findings and recommendations deriving from this research study. Chapter 6 will also reflect on the strong points and the limitations of the study, and recommendations for further study.

CHAPTER 6: SUMMARY OF MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Namibia, like many other countries, has embraced the Bilingual-Bicultural approach to teaching deaf learners. This approach recommends that deaf learners be taught natural Sign Language as a first language, and then a second language, such as English, after this foundation has been laid. Despite high expectations that were set on the Bilingual-Bicultural approach for Deaf Education in Namibia, there is a lack of results that thus far support any success of this approach. After years of independence the deaf community in Namibia feels that there is very little to be proud of in Deaf Education, as deaf learners still fail their junior secondary phase of schooling, preventing them from continuing with their senior year of high school education.

Regardless of the fact that Deaf people can become proficient readers and writers, finding an appropriate approach to obtain the desired results remains a challenge. Individual diversity among deaf learners and the various factors that contribute to the success of learning within a Sign Bilingual programme makes following a single method of teaching all deaf learners difficult. The challenge is to find the best instructional practice to teach according to the Bilingual-Bicultural approach and cater for the needs of all deaf learners.

Pre-literacy starts at home and later advances at school. This is an even bigger challenge, as deaf learners not only differ from their hearing peers, but also vary greatly among themselves in respect of their various family and social backgrounds as well as language use and overall holistic development. Grounded in the works of Bandura's social cognitive learning theory, linked with Bronfenbrenner's bio-ecological system theory, this study provided a better understanding of the role of a child's home and social environment on his or her learning and literacy development. In order for a deaf child to acquire Sign Language and English, especially in its written modality, he or she needs to be in an environment where these languages are modelled. Parents and teachers are the most suitable models to create such an environment. These individuals need to project the appropriate behaviour and knowledge towards deafness, Sign Language, Written English and Deaf Culture for the learning of the two languages to take place for the deaf child.

The most important aim of the study was to determine how biliteracy skills in deaf learners could improve after the application of a Bilingual-Bicultural literacy intervention programme. This led to the development of tailor-made tests to determine the language ability of the deaf learners within a particular context before and after the programme intervention. A biliteracy programme that was thought to be applicable to the deaf learners in Namibia was designed. An investigation was then done to determine the challenges faced in implementing a biliteracy programme at a school for deaf learners and to explore the roles of teachers and parents in the support of biliteracy for deaf learners. This study adopted a programme evaluation within a multi-method research design. Data were gathered by means of both quantitative and qualitative research methods. In this study the following sequence was followed:

Chapter 1 offered a backdrop to Deaf Education in Namibia as well as a brief summary of the research. To provide an understanding of the study's purpose, the research problem, aims, objectives, research questions, and value were introduced. The study's theoretical framework was offered in this chapter, which is based on Bandura's social cognitive learning theory and Bronfenbrenner's bio-ecological system theory. The study's methodology and limitations were briefly reviewed as well.

Chapter 2 provided a comprehensive examination of literature related to Bilingual-Bicultural Deaf Education and the theoretical foundation of Cummins' linguistic interdependence hypothesis. This resulted in a better view of reasons why the Bilingual-Bicultural approach that was adopted in Namibia could not show the expected results. Literature that elaborates the work that was done on Bilingualism in education in the context of Translanguaging was similarly presented. This gave a new perspective on the diverse needs of deaf learners regarding language learning. Lastly, the chapter reflected on Sign Bilingual Education policies in the Scandinavian countries, compared to practices in countries such as South Africa and Namibia.

Chapter 3 provided a systemic review and discussion of the literature that supplies the necessary information and perspectives on the issue of the literacy development of a deaf child. The need for the development of instructional practices that can support the Bilingual-Bicultural programme in Namibia was made more evident. Focus was given to works reflecting on the biliteracy of the deaf child through studying instructional strategies to teach reading and writing to deaf learners.

Reflection was also done on the roles of parents and teachers of deaf learners regarding their literacy development.

Chapter 4 addressed the research methodology of this study. The study implemented a Bilingual-Bicultural literacy programme at a school for deaf learners in Namibia and was directed by a programme evaluation within a multi-method research design. A full explanation was provided of the Bilingual-Bicultural literacy programme as well as the particular research design, the sample of the study, both qualitative and quantitative data collection procedures and research instruments. Ethical issues that were considered and how the data were analysed were also included in the discussion.

Chapter 5 presents and discusses quantitative and qualitative data that were collected and analysed by means of multi-data analysis. The data were presented and discussed in accordance with the outcome of a programme evaluation within a multi-method research. The quantitative data results are presented first, based on the instruments used for the NSL and Written English assessment. This is followed by the presentation of the qualitative data results that were presented under five categories and sub-categories. Qualitative data were collected from document analysis, interviews, observations, field notes, and programme evaluation. The last part of the chapter discusses the results from consolidated data that were retrieved from both quantitative and qualitative data.

Chapter 6 provides a summary of the findings, recommendations and conclusions of the study. This chapter summarises the entire research process and contribution that are made through the study. Answers are provided to research objectives and recommendations are made.

6.2 Reflection on the programme evaluation and research findings

This study provided the implementation of a Bilingual-Bicultural literacy intervention programme for deaf learners. The central aim of the intervention programme was to find the best instructional practice to teach the Bilingual-Bicultural approach that caters to the needs of deaf learners in Namibia. The principal objective of the Bilingual-Bicultural literacy intervention programme gave way for programme evaluation. The theory-approach logic model method for evaluating a programme was used to evaluate the Bilingual-Bicultural literacy intervention programme. The outline of the logic model captures and exemplifies the purpose and content of the intervention

programme. Reflection on the primary research objectives and the logic model guided the researcher to develop evaluation questions that were used to guide the evaluation process of the intervention programme. Based on the research objectives, the logic model and the programme evaluation questions that were drawn up and the quantitative and qualitative data that were analysed, the following feedback is provided.

6.2.1 Creating a favourable environment through Bilingual-Bicultural instructional practices

Literature suggests (see section 3.4 in chapter 3) that for deaf learners to become biliterate they should be provided with a favourable learning environment that will offer them access to fluent models in both Sign Language and a spoken language. In addition to early exposure to language, socialisation, and how they are introduced to the world of print can contribute to successful reading and writing skills. Using Sign Language to help print come alive or merging Sign Language, fingerspelling and print in interaction with the deaf learners is a method that is not seen as language mixing, but Translanguaging which is a pedagogical means of moving between languages to bring about better understanding. This instructional method creates a rich communicative environment in which learners have access to a variety of people and things who can speak with them, as well as the ability to debate a variety of themes and make a connection to English print.

The instructional technique used in the intervention programme was a systematic method of teaching deaf learners two languages at the same time (see section 5.3.1 in Chapter 5). It integrated the curricular themes and topics into the skills of the two languages. Learners were taught NSL and Written English in small portions adding to existing knowledge in small doses and doing revision by incorporating information that was taught over and over again in lessons. Written English lessons were taught based on what was taught in NSL, meaning learners first had to understand the concept in NSL before it was taught in Written English. The two languages were compartmentalised by using colour. Blue colour was an indication for NSL and red colour was an indication for Written English. By using the two colours for the two languages, Translanguaging took place in some of the lessons especially the Written English lessons. This was done as the learners could use whatever skills and knowledge that they had in the one language to apply it to

the other language. In this case the learners could use skills and knowledge of NSL and apply it to the Written English and skills and knowledge that they had in Written English and apply it to NSL.

An enjoyable learning environment was created for the learners through putting up posters to promote incidental learning and providing them with various word building games and spelling competitions. A reading and writing corner were also established for the learners. This was done to expose the learners to a fun reading and writing environment, for reading and writing material to be readily available to the learners and for teachers to make use of as a break from the normal classroom teaching situation. Learners could be moved to the reading corner to be read to or to read and practise writing by themselves. Learners could also be sent to the reading and writing corner as an award for work that was done well, or for completing their tasks quickly. Home scholars could wait in the reading and writing corner and keep them busy until their parents picked them up after school. Through this research it was noted that the learners enjoyed spending time in the reading and writing corner.

6.2.2 Significant teachers' attribute

In line with significant teacher attributes that are deliberated on in Chapter 3, the follow teacher attributes that can affect the language learning and biliteracy of deaf learners emerged from the qualitative data: the teacher's sense of self-efficacy, the type of education degree that a teacher holds, continues professional development through in-service training, teacher's ability to communicate in Sign Language, the teacher's experience and skills in teaching deaf learners and the teacher's relationship with the learners.

Finnegan (2013:18) believes that a major element of effective teaching is a teacher's sense of self-efficacy. The data from the current study that were analysed indicated that the junior primary teachers who participated in this study to a great extent showed a positive sense of self-efficacy. They accepted the new intervention programme and eagerly made it part of their teaching. The teachers also showed enthusiasm and confidence to teach their learners according to the Bilingual-Bicultural literacy intervention programme.

In further discussions, Polat (2003:334) found that the type of education degree teachers hold can play an important part in the effectiveness of the teachers. The data from the current study that were analysed indicated that four teachers had university degrees, with three of the four who

specialised in Deaf Education. These teachers were aware of the special needs of the deaf learners and were better able to teach deaf learners. They also showed competence and effectiveness in their teaching.

Issaka (2018:664) maintains the importance of continuous professional development through in-service training as a significant teacher attribute. The data from the current study that were analysed indicate that teachers receive regular in-service training from the Centre for Communication and Deaf Studies (CCDS). It is also evident that the school management team supports any in-service training that can be provided to the teachers.

Namukoa (2012:52) adds that a teacher's ability to communicate in Sign Language as a significant teacher attribute and maintain that it is the most ideal characteristic of effective teaching of deaf learners. The teacher's fluent use of Sign Language in explaining concepts to deaf learners can lead deaf learners to actively engage and participate in continuous exploration and innovation in their learning. The data from the current study that were analysed indicate that all the teachers who participated in the study prefer to use NSL when they communicate with the deaf learners and all the teachers felt that they were fluent enough in NSL to teach the deaf learners. They all make a conscious effort to present their classes in NSL.

Knoors and Marschark (2014:17) believe that experienced teachers are a significant teacher attribute. In their opinion more experienced teachers are better able to react to events in the classroom and are better able to accommodate greater complexity in the classroom compared to newer teachers. The data from the current study that were analysed indicate that this is not necessarily the situation within the context of this research. More experienced teachers are not necessarily the teachers who have been teaching the longest, but the teachers with higher qualifications and training and those who showed more enthusiasm towards teaching the deaf learners. The data also reveal that teachers with higher personal work ethics are more empowered to achieve greater success in their everyday teaching and managing of classroom events. Teachers with a lower personal work ethics easily fell behind with their work and are less able to manage their work and classroom events.

Lastly, Knoors and Marschark (2014:18) advocate the importance of good teacher-learner relationship as a significant teacher attribute. They maintain that learners with good relationships

with their teachers tend to perform well academically and that a positive relationship with the teacher is particularly important to learners who do not come from a very positive home environment. The data from the current study that were analysed indicate that small class sizes allow for teachers to have positive one-on-one interactions with the learners. The school also has a system in place of providing individual support to learners. This develops good teacher-learner relationships, which make the learners feel comfortable to interact with the teachers.

Even though the data results show positive teacher attributes in relation to the discussion above, positive teacher attributes can only contribute to a small portion of the success of a Bilingual-Bicultural literacy programme. Knoors and Marschark (2014:14) believe that the learning environment in schools is to a great extent prepared by the teachers, as teachers need to plan, develop and manage a social and academic environment for learning to take place. However, according to Swart and Pettipher (2016:22), collaboration between role-players in this context is essential and it means that no one should have to handle this challenge and responsibility alone. Teachers for deaf learners need support, advice and guidelines to teach the learners effectively, so that they can make a positive contribution to the Bilingual-Bicultural literacy programme.

6.2.3 Teacher support

Data from this study that were analysed indicate that the teachers lack support to teach the deaf learners. Even though the learners from the study participated in one programme and even though they all came from hearing families, they are very different from one another. According to Swanwick et al. (2014:293), differences between deaf and hearing learners and among deaf learners themselves, in particular regarding to language and cognitive development, make studies of their academic achievement very difficult. Individual diversity among deaf learners and the various factors that contribute to the success of learning within a Sign Bilingual programme makes following a single method of teaching all deaf learners challenging. The data from the current study indicate that the deaf learners in this study, among other things, vary in their level or degree of deafness and pre-lingual or post-lingual deafness. They vary in their age of starting school and the level of support of teaching and language acquisition they received prior to school. They similarly vary in their level of cognitive development and whether or not they are challenged with additional disabilities or specific learning disabilities. The data from the study also reveal that the

support that the teachers receive in order to teach this diverse group of learners is almost non-existent and a lot is left to the teachers to assume matters without evidence or guidance. Knoors and Marschark (2012:301) state that a bilingual environment for deaf learners assumes the availability of professionals in the fields, who are sufficiently trained and skilled in Sign Language and Deaf Education. However, the data from this study that were analysed indicate three branches of support that are needed to sustain teachers: support from other professionals, support from subject experts and support from school management. The needed support systems are, however, either non-existent or misguided. The draft Curriculum Framework for Inclusive Education in Namibia suggests the composition of Multi-Disciplinary Teams (Ministry of Education, 2014a:36). These teams include various professionals in the field that can provide support. The composition of the members of these teams can vary from learner to learner. This document is, however, still in draft form and not yet approved or implemented.

The analysed data for this study further indicate that the teachers need the support from subject experts, as specialists of the two subjects (NSL and Written English), to fully comprehend basic competencies and lesson objectives that are prescribed in the syllabi. They need continuous training on strategies to teach context-specific parts of the syllabi. Within the Namibian context, it is usually the responsibility of Subject Advisory Teachers to provide this type of support to teachers. However, there are no appointed Advisory Teachers for the NSL and Written English subjects. Teachers are thus dependent on Chief Education Officers and the HOD to provide them with curriculum support, but these individuals are not subject experts to provide the teachers with the support they need to teach NSL and Written English as subjects.

The analysed data for this study also reveal the vital role that the school management teams play in the execution of plans and actions taken for the sake of learning. The teachers thus also need the support of the school management team. The analysed data, however, indicate that through unintentional practices from the side of school management, weeks of teaching are lost and teachers are unable to complete their work with the learners. Swart and Pettipher (2016:21), maintain that in order for a school to establish supportable systems and structures that support improved, flexible and adaptable learning approaches, planning is needed to alter a culture and the way a school is organised. To achieve this successfully, principals, teachers and the school community need to be committed.

6.2.4 Parental involvement

The following deduction was made in answer to the programme evaluation question on how parental involvement improves deaf learners' learning and biliteracy. According to Steward and Clarke (2003:148), language development begins at home. As a result, it is the responsibility of the parents to ensure that their deaf child is exposed to language as soon as possible, as the early years are critical for a child's language acquisition (Steward & Clarke, 2003:148). Most deaf children of Deaf parents, according to Lane et al. (1996:27), function academically, linguistically, and socially better than deaf children of hearing parents. Deaf children of Deaf parents who utilise natural Sign Language have an advantage in learning a written or spoken language as compared to deaf children of hearing parents (Knoors & Marchark, 2012:293). Unfortunately, all of the learners in this study have hearing parents.

Garcia and Kleifgen (2011:182), however, elaborate that another significant positive predictor to academic achievement is parental involvement in the learners' school-based education programme. Despite the hearing status of parents, the positive thinking and attitudes of parents of deaf children are also crucial to the growth and development of the child and it can positively influence the child's self-esteem (Sadar & Kadir, 2012:148). Parents who spend time with their children, who facilitate their children's academic and extracurricular interests and who answer their children's questions in supportive atmospheres nurture academic excellence as well as psychosocial maturity (Marschark, 1997:224).

The data from the current study that were gathered from interviews with the teachers and school management, as well the documents that were analysed indicate a lack of parental involvement and a lack of parental accountability towards children's education. From the group of learners only a few parents showed positive academic support towards their children. Aspects that show a lack of parental accountability towards their children's education are learners who are not enrolled in school at the recommended age and thus started school at a late age, learners who were enrolled in school late in the academic year and learners who are taken from school and returned, weeks, months and even years later. Other aspects are the lack of assistance provided by parents to their children with homework given by the teacher and the lack of parental participation in parent-teacher activities at the school. Ngobeni et al. (2020:2), argue that not many schools cater for deaf children and those schools that do accommodate deaf children might be far from learners' homes.

Parents might also work far away from the school or they do not feel comfortable to send their young children away from home to stay in hostels. These reasons might also be applicable to the lack of parental involvement in this current study.

Ntinda et al. (2019:85), however, indicate a need for higher levels of parental involvement that can contribute to positive academic outcomes for deaf learners. This need is also reflected in this current study with the assumption that should parents take more accountability and responsibility for their children's language development and education and should they show more support towards their children's language development and education, better academic results can be achieved. Parental involvement was limited in the implementation of the Bilingual-Bicultural literacy programme. Although conscious efforts were made from the side of the school and the researcher to involve parents in the programme, parents were still unable to show up for scheduled engagements. In line with Ntinda et al. (2019:85) it is the notion of this study that positive parental involvement in the deaf learners' education can contribute to better academic outcomes.

6.2.5 The role of hostel matrons

An additional theme of discussion that derived from the investigated data is the role that hostel matrons play in the biliteracy development of the deaf learners. Analysed data from the study indicate that 78% of the learners in the study resided in the hostel. This makes hostel matrons the closest adult role models to these learners. In the absence of parents who cannot be readily available to support their deaf children in the hostel, the hostel matrons fill a great gap in the lives of the deaf learners. What was observed during the researcher's participant observation and through informal discussions with the hostel matrons was that they understand the deaf learners, they understand Deaf culture, and they understand the academic and social struggles that deaf learners face. They know the history of each child in their care and they have the knowledge and understanding to offer the necessary support and motivation that the learners need. This was also confirmed through the responses provided from the teacher participants.

According to Singleton and Morgan (2006:334), interaction and participation as members of a community not only develop learners' identity, but communication skills are also developed. Learners' social-emotional development or social competence links to positive academic outcomes; therefore, deaf learners with better language and communication skills perform

academically better (Calderon, 2000:141). The data from the current study that were analysed indicate that of the nine learners who were identified as higher performing learners in the diagnostic assessments, eight resided in the hostel and only one was a home scholar. From this analysed data it is evident that the hostel matrons play a vital part in the lives of the deaf learners left in their care and this cannot be overlooked. It was further observed in this study that within the hostel context the learners are in a signing environment and among adults, friends and peers who are deaf and signing with whom they can communicate. The learners are provided with emotional, moral and academic support by the hostel matrons, which plays a significant part in their development.

6.2.6 Teachers' improvement from the Bilingual-Bicultural literacy intervention programme

The programme evaluation question that examined how teachers can gain from the Bilingual-Bicultural literacy intervention programme resulted in a discussion on teacher improvements from the intervention programme. According to Polat (2003:334); Issaka (2018:665), special training in the area of deafness to teachers for deaf learners and knowledge of the content that needs to be taught can influence deaf learners' academic achievement. One aim of the intervention programme was to improve teaching practices. This led to intensive training of the teachers to teach the programme. In accordance with the analysed data that were deduced from interviewed question and evidence from observation sheet and field notes, the teachers showed better understanding to prepare and present their NSL and Written English lessons, they gained an understanding on the importance of creating a visual environment to provide better access to language learning, and they became more aware on what they assessed and how they assessed it.

When teachers were asked how they benefited from the programme, the conclusion was that they now understand better how to teach NSL and Written English than before the programme. In 4 of the 10 observed lessons the teachers even showed origination to personalise the prescribed lessons, only making use of the learning material of the programme. Analysed data also indicate that learners respond well to both NSL and Written English lessons. However, from the Written English lessons observed it transpires that teachers have a tendency to focus in their Written English lessons more on word building and fingerspelling than on reading, writing and

grammatical structures. The notion of this study is that this tendency of the teachers can have a negative influence on the level of development in Written English for the deaf learners.

Wauters and De Klerk (2014:242) state that reading is a skill that needs to be learnt or taught and most of the time this skill is acquired in school. Teachers thus need to know how to teach this skill, as the quality of instruction plays an important role in the academic performance of deaf learners (Wauters & De Klerk, 2014:248). According to Marschark (1997:224) evidence shows parallel performance between deaf learners' reading and writing abilities. This means that the writing skill of deaf learners follows the same pattern as their reading skill. In addition, Stewart and Clarke (2003:176) refer to the importance of routine in the learning experiences of deaf learners which specify the significance of regular reading and writing lesson activities that will provide the learners with recurrent opportunities to explore and internalise concepts that were acquired automatically in skill and so gain appreciation for what they have learned. For the current study it is thus important for teachers to routinely present lessons on all the skills of both NSL and Written English to the deaf learners.

Analysed data from the current study also indicate that presently teachers recognise the importance of learning material and a conducive and favourable learning environment. The data that were examined specify that learners enjoy and benefit from the use of the learning materials that are provided to them. Kuntze et al. (2014:215) believe that media, particularly recorded educational content, can be an ideal way to introduce Deaf Culture and Sign Language to deaf children, particularly those who do not have access to Deaf people or peers. Educational media, such as recordings created to assist children become literate, can help children build mutual respect for and a positive knowledge of themselves and others, in addition to developing and promoting literacy skills (Kuntze et al., 2014:215). Analysed data from the current study, however, also indicate that teachers do not always put new material on the classroom walls and some are reluctant to put up any suitable material. Learners could thus not fully benefit from a conducive and favourable classroom learning environment as anticipated for the intervention programme.

Analysed data from the current study indicate that the Ministry of Education Arts and Culture are providing teachers with prescribed procedures as to how they should conduct their NSL and Written English assessments. These procedures provide the teachers with an opportunity to focus on the strengths and weaknesses of the deaf learners and engage in a diagnostic language teaching

method. Knoors and Marschark (2014:83) maintain that this form of teaching provides continual interaction between assessment of skills and progress as well as programme planning. It can be done on an individual level and on a classroom level and the goal of the assessment is guidance. Analysed data from the current study indicate that teachers are now more aware of what they assess and how they assess it. They now consider best applicable assessment activities with accompanying marking guides and the significance of keeping record of the assessment activities.

Even though the teachers gain immense knowledge and better understanding through the training that was provided during the intervention programme, an important aspect that remains is that of sustainability. The way how they will maintain and sustain the knowledge that they gain and how they will use it in the classroom will have an impact on the further development of biliteracy for deaf learners. Routine and consistency are important factors that contribute to the success or failure of the Bilingual-Bicultural literacy programme and ultimately the biliteracy development of the deaf child.

6.2.7 Impact of the Bilingual-Bicultural literacy intervention programme on the language learning and biliteracy of deaf learners

The influence of a Bilingual-Bicultural literacy intervention programme on deaf learners' language learning and biliteracy was an important goal of this study and programme evaluation. The capacity to read and write is a basic definition of literacy. This definition can be expanded to include the ability to comprehend and apply printed information in daily activities at home and in the community, the ability to think and reason within a given society, and the ability to achieve one's goals and develop one's knowledge and potential through language advancement (Stewart & Clarke, 2003:4; Ortiz & Ordonez-Jasis, 2010:131; Alvi & Hammed, 2018:18). Analysed data from the study indicate that the learners overall performed better in their NSL pre- and post-test scores than in their Written English test scores, and better as their grade years progressed. NSL has five testing components: Picture Signing, Sign Identification, Arranging picture stories, Expression and Communication as well as Observation Comprehension. The learners performed overall better in the Picture Signing and Sign Identification components. They performed weaker in the Arranging of picture stories, Expression and Communication as well as Observation Comprehension. Written English test also has five testing components: Word Reading, Word Identification, Fingerspelling,

Syntax Development and Reading Comprehension. The most challenging testing components for the learners were the Word Reading and Fingerspelling components. Similar to the NSL tests, the learners performed better as they progressed in their grade years. Grade 3 learners performed better than Grade 1 and Grade 2 learners.

The quantitative data, in consolidation with the qualitative data from the study, reveal that learners who notably performed better in the assessment activities have the following attributes: eagerness to do schoolwork, enthusiasm and motivation, and a competitive drive. Those learners who notably performed weaker in the assessment activities only did so in the Written English assessment activities. They had the following attributes: in the absence of formal evaluation the teachers and hostel matrons assumed that they were suffering from one or other illness, or an additional disability, and some started school late with no previous exposure to NSL.

Through the Bilingual-Bicultural literacy intervention programme all the learners showed improvement in their NSL literacy skills. They gained a lot of new signs and understanding on the use of NSL grammar. This gave them confidence to participate in class discussions, giving their opinion on the suggested topic, and at times also challenging the teacher. The learners however, showed less of an improvement in Written English. It was especially challenging to the Grade 1 group of learners. A positive change in their attitude was however noted as they became more familiar with learning to read and write new words, phrases and sentences. They gain more confidence to explore with the Written English.

6.2.8 Conclusion to the research findings

For this study the theory approach logic model tool for evaluation was used to design a framework to plan, implement and evaluate the Bilingual-Bicultural literacy programme effectively and systematically. The theoretical ideas on which the assumption of the logic model is based, had a good impact on the intended results of the Bilingual-Bicultural literacy programme. These theoretical ideas are as follows:

- First-language competency in NSL is needed to develop a second language (Written English)

- Language development through NSL would assist the quality of communication and the level of comprehension needed to achieve literacy.
- Parents and teachers play a fundamental role in the deaf child's language development.
- The understanding of well-directed instructional practices supports effective learning and teaching

In the end the impact that was seen was an immense improved literacy in NSL and some improved literacy in Written English of the deaf learners. The notion of this study is that in order to reach a greater impact of the Bilingual-Bicultural literacy programme on the language learning and biliteracy of the deaf learners, all the stakeholders involved should be fully committed to reach one related goal. All stakeholders, parents, teachers, hostel matrons, the school management team and the Multi-Disciplinary Teams (as prescribed in the draft Curriculum Framework for Inclusive Education), should be equally devoted to work toward the language development and biliteracy of deaf learners. The sustainability of the Bilingual-Bicultural literacy programme can be ensured through further development on the instructional practices and creating favourable learning environments for deaf children. Even though teachers show positive and significant teacher attributes, they still need various support systems to be in place to maintain teaching and learning. These supported systems should be well informed in the pedagogy of the education and development of a deaf child. The emphasis of this programme was to develop suitable instructional practices to teach deaf learners through the Bilingual-Bicultural approach. It was of great significance that the teachers understood the aim of the programme which was to teach deaf learners to be bilingual. Through the training that was provided to the teachers during the implantation of the programme, they gain understanding on the pedagogy of bilingual deaf education. This, however, needs to be maintained with continuous training and constant debate on best practices to Deaf Education. Parental involvement remains an important and unacquainted aspect in the language learning and biliteracy of the deaf child. The role that parents play in the academic achievement of their children cannot be overlooked. The hostel matrons equally play an important role in the progress of the deaf learner who resides in the hostel. They fill in gaps that are needed for the holistic development of these deaf learners. This Bilingual-Bicultural literacy programme indicates that deaf learners have the ability to become biliterate to a certain extent. The

foundation of their biliteracy, however, depends on the bio-ecological structures they find themselves in and whether or not this is favourable to their holistic development.

6.3 Limitation of the study

Some limitations that emanated from the study, which are important to consider and to address. The first limitations came from the instruments used for the collection of quantitative data in the form of diagnostic tests. In the absence of readily available instruments that can be used with deaf learners in Namibia, tailor-made assessment instruments were developed for NSL and Written English. The reliability and validity of scores from past uses of the instruments could thus not be provided. However, Johnson and Christensen (2014:172) reason that in selecting a research tool, one needs to make sure that the tool that one selects for one's data collection will provide one with the information that one seeks, that it measures what it intends to measure and that it is suitable for the particular population and context. In line with what Johnson and Christensen (2014:172) state, the researcher made sure that the tailor-made diagnostic tests could provide answers to the research objectives and evaluation questions it was intended for.

Face validity, which is the extent to which instruments appear on the surface to measure what it is supposed to measure, were ensured as the different instruments for each of the grades were designed. Content validity was also ensured, which is the extent to which an instrument represents the content area being measured (Leedy & Ormrod, 2016:115). Face validity and content validity were done when the testing instruments were drawn up, with the assistance of an expert from the CCDS, a deaf colleague, and the junior primary teachers at the school for deaf learners. To further establish validity of the testing instruments, inherent biases of selecting items that only cater for learners on one level were reduced (Pizzo & Chilvers, 2019:10). This was done by systematically developing and selecting the items in the instruments to incorporate manageable activities to more stimulating activities for the assessment of each grade level. The results obtained from the measuring instruments can nonetheless not be generalised.

The second limitation was that quantitative data were collected using only one group of learners and not having a comparable group. According to Harris et al. (2006:17), a randomised control group is more commonly considered to have a higher level of credibility with regards to determining the effectiveness of an intervention programme. However, according to Creswell

(2014b:347), there are ethical concerns with the procedures used in experimental research with a randomised controlled group. One concern is about the ethics of withholding a teaching method from learners in control groups when these learners might be disadvantaged by not receiving the benefits from the particular teaching method. By including all the learner participants in this study, ethical concerns regarding the selection of a randomised control group and withholding some learners from benefiting from the intervention programme was reduced (Creswell, 2014b:347). All the learners were thus given an equal opportunity to benefit from the advantages that the intervention programme had on language and literacy development. With the one group pre-test post-test design, it was clearly noted that some change has taken place; however, it cannot be said for certain that this change was due to the intervention programme (Leedy & Ormrod, 2016:204).

Another limitation to the study was to get parental involvement, the reason being that the majority of the learners stayed in the hostel, with their parents residing outside the city where the study was conducted. Guardians who were assigned to the learners by the parents did not avail themselves or show up for parent meetings or the planned engagements. The researcher had to rely on the information provided from the school management and teachers. This might be perceived as biased, as the feedback that was provided regarding parental involvement was one sided. The feedback was only provided from the side of the school management and the teachers and not directly from the parents. The researcher could, however, correlate the information provided by the school management and teachers to the relevant participant observations that were made during the study.

The last limitation was the great amount of time that it took to compile the diagnostic test, the intervention programme and the collection of the data. Mouton (2011:150) warns that this can be a problem. This timely process, however, assisted the researcher to obtain a closer relation with the context of the study and gain a more holistic perception and understanding of the study. Leedy and Ormrod (2016:204) suggest that to validate qualitative data, one must spend sufficient time at the research site to draw an accurate understanding of the research phenomenon.

6.4 Value of the study

This study contributes toward a better understanding in educating deaf children in Namibia. It contributes to the teaching of a Bilingual-Bicultural approach using precise instructional practices

and, in the process, gaining better perspective in the psychology of educating deaf learners. As a Bilingual-Bicultural literacy intervention, the study focused on teaching NSL as a basis for Written English. Teachers were provided with effective support through intensive training and teaching materials. Lessons and teaching materials were built on newly adapted, Integrated Planning Manuals that were drawn up specifically to cater for NSL and Written English skills. These IPMs, lessons and teaching materials are now readily available to be published as teacher guides and distributed to other schools for deaf learners.

The value of the study is grounded in the benefit it has for deaf learners in teaching them to be biliterate, leading to better academic performance for them. Through this study, further debates and dialogue will be initiated on how these instructional practices can be circulated to all schools and units for deaf learners in Namibia. Discussions will also be held as to how these instructional practices can be extended to senior primary, junior secondary and senior secondary educational phases. Context and content specific diagnostic tests were drawn up to give the best indication of biliteracy level of the Namibian deaf child. These diagnostic tests can now become standardized tests for evaluating the biliteracy skills of junior primary deaf learners in Namibia.

Obstacles to a successful Bilingual-Bicultural programme include the lack of parental involvement, the lack of appropriate pedagogy and lack of physical resources and skills to teach NSL and Written English (Mayer & Leigh, 2010:178). The intervention programme directed through this study contributed to the eradication of these barriers. The topics of parental involvement, the lack of appropriate pedagogy and lack of physical resources and skills have received extensive discussion and resolutions. The study encourages more focus on academic planning and management at schools for deaf learners, continuous material development, and the development of diagnostic measures. This study also encourages stakeholders in Deaf Education to give more attention to the role that hostel matrons play at schools and units for deaf learners, as well as the role of other professionals and experts in the education of deaf learners. The focus has now changed from Deaf awareness to quality Deaf Education that meets the needs of the deaf learner.

6.5 Recommendations and suggestions for further research

In view of the reflection on the research findings and literature review, the following recommendations are made on the education for deaf learners in Namibia, which are based on the implementation of the Bilingual-Bicultural literacy intervention programme. The results from the analysed data suggest that all learner participants in the study showed some improvement in their biliteracy skills. Less of an improvement was shown in Written English literacy skills, but a positive change in learners' attitude was noted and learners appeared more confident to explore with Written English. From this study it is recommended that the National Institute for Educational Development (NIED) adopt the Bilingual-Bilingual literacy programme and implement it in all schools and units for deaf learners in Namibia. The same intensive training that was provided to the teachers through the intervention programme should be provided to the rest of the teachers at other schools and units for deaf learners.

The Integrated Planning Manuals, the weekly lessons for NSL and Written English with the accommodating worksheets for the learners and written tutorials for the teachers that were developed for the intervention programme should be published as teacher guides and distributed to all schools for deaf learners. The series of Kahdila and Martha stories that are based on two deaf characters, written to complement the NSL and Written English lesson for Grade 1-3 learners, should be published in both NSL and Written English format and distributed. The picture dictionary that was compiled for teacher, learners and parents should also be published and distributed to be used at all schools and units for deaf learners in Namibia

Readily available testing instruments for NSL and Written English was a limitation for this study. Based on the tailor-made diagnostic test that were development through this study, it is suggested that NIED through the University of Namibia develop more standardised NSL and Written English tests that fits within the Namibian context and that are valid and reliable for testing the language aptitude of the Namibian deaf child.

The study showed that there is a great variation among deaf learners. Deaf learners do not only differ from their hearing peers, but they also differ greatly from one another. From the study it was noted that in the absence of formal professional evaluations and diagnostic tests, a lot of assumptions are made and no clear guidelines are available for the teaching of this heterogeneous

group of learners. Through the literature review, the support and ready availability of other professionals are suggested. The Curriculum Framework for Inclusive Education document also suggests the support from Multi-Disciplinary Teams; however, this document is still in draft form and has not yet been implemented. This study thus recommends that schools for deaf learners establish a relationship with other professionals such as medical doctors, audiologists, speech therapists, educational psychologists and social workers. This should be done to assist teachers for deaf learners to understand specific learning difficulties that learners might experience and assist in drawing up precise learning plans and assessment strategies for these learners.

Outcomes from the study indicate that at times teachers were not on par with the NSL and Written English methodology. Basic competencies and learning objectives, as prescribed in the syllabi were at times misinterpreted or not met at all. It was also noted that there are no appointed subject experts or subject advisory teachers to assist and guide teachers with the teaching of NSL and Written English. From this study it is recommended that subject experts or advisory teachers for NSL and Written English be trained in pedagogical understanding and appointed in assistance for teachers. Continuous in-service training and support should then be provided to the teachers on the teaching and learning of NSL and Written English.

Through the study it was determined that a lot of teaching and learning time was lost through unplanned activities at the school. It is thus recommended that regular planning be done at schools for deaf learners with the necessary stakeholders involved. Inspectors, principals, HODs and teachers need to plan academic activities together and clear goals need to be set for the academic development of the deaf learners. These set goals need then to be carefully managed by the inspectors, principals and HODs. In cases where needed, precise training must be provided to the inspectors, principals and HODs on how to manage academic goals and establishments for deaf learners.

The study revealed limited parental involvement and accountability of the majority of parents towards their children's education. Analysed data from this study indicate that few learners who were supported by their family or a guardian notably performed well. This study suggests that an investigation needs to be undertaken to determine the reasons why the majority of parents showed limited involvement and accountability for their deaf children. Based on the investigative results, parental support systems need to be established from the side of the school. Schools and units for

deaf learners need to make a clear effort to develop a strong, respectful and productive partnership with families. Parents need to be provided with NSL training and training on how they can support their deaf child academically, linguistically, emotionally and socially.

Lastly, the study showed that the majority of deaf learners reside in the hostel, making hostel matrons and teachers the closest adult role models to these learners. It is recommended that hostel matrons should be included in the academic planning and goals of the school. Teachers and hostel matrons should work closer together in the linguistic, academic, social and emotional development of the deaf learners. Teachers must share educational plans that they have for the learner, with the hostel matrons. Hostel matrons should also be provided with in-service training on how they can assist learners with their academic work and how they can act as tutors to the deaf learners at the hostel.

6.6 Conclusion

> *Wherever the deaf have received and education the method by which it is imparted is the burning question of the day with them, for the deaf are what their schooling make them more than any other class of humans. They are facing not a theory but a condition, for they are first, last and all the time the people of the eye.* (George Veditz, n.d.)

Providing deaf children with the best possible opportunity for education and personal success has become a matter of urgency in Namibia. Creating an education will eventually allow them to fully participate in the larger society by being as proficient as possible in reading and writing. The Bilingual-Bicultural approach has been identified as the most suitable approach to teaching deaf learners. This educational approach recognises the unique features of Sign Language and Deaf Culture and strives toward the democratic goal of social inclusion and diversity. Deaf learners, identified as a heterogeneous group, make using a single approach of teaching perplexing. A Bilingual-Bicultural literacy intervention programme was designed with carefully thought-out instructional practices. This led to an improvement in the language learning and biliteracy of the deaf learners. Through the implementation of the intervention programme, important lessons that were learnt were that it takes a team of hardworking and dedicated individuals to obtain biliteracy and academic success for deaf learners. Although parents and teachers of deaf learners play an important role, the responsibility does not solely lie with them. All stakeholders involved should have a similar and exclusive goal that they work towards and that goal should be the education of

the deaf child. Continuous interaction and support are needed at all levels. No person should have to be alone in caring the responsibility of education for deaf learners. Each individual should take responsibility for the part that he or she plays in educating deaf learners.

REFERENCES

Akyil Y, Prouty A, Blanchard A & Lyness K. 2014. Parents' Experiences of intergenerational Value Transmission in Turkey's Changing Society: An Interpretative Phenomenological Study. *Journal of Family Psychotherapy* **25**(1):42-65.

Albertini JA & Schley S. 2003. Writing: Characteristics, Instruction, and Assessment. In: Marschark M & Spencer PE (eds), *Deaf Studies, Language, and Education*. New York: Oxford University Press. pp. 123-135.

Andrews JF, Hamilton B, Dunn KM & Clark MD. 2016. Early Reading for Young Deaf and Hard of Hearing Children: Alternative Frameworks. *Psychology* **7**:510-522.

Ashipale SP, Daniel P, Haikale M, Israel N, Linus FT, Henock H & Morgan R. 1994. The Development of a Dictionary of Namibian Sign Language. In: Erting CJ, Johnson RC, Smith DL & Snider BD (eds), *The Deaf Way: Perspectives from the International Conference on Deaf Culture*. Washington DC: Gallaudet University Press. pp. 342-346.

Ataabadi S, Yusefi Z & Moradi A. 2014. Predicting academic achievement among deaf students: emotional intelligence, social skills, family communication and self-esteem. *European Journal of Research on Education* **2**(1):35-46.

Alvi IB & Hameed A. 2018. Analysis of Syntax Errors in Written Language of 8th Grade Students with Hearing Impairment. *Journal of Inclusive Education* **2**(1):17-32.

Bandura A. 1977. *Social Learning Theory.* New Jersey: Prentice-Hall.

Barkaoui K. 2007. Perspectives Revision in Second Language Writing: What Teachers Need to Know. *TESL Canada Journal*, **25**(1):81-92.

Bee H & Boyd D. 2010. *The Developing Child*. 12th ed. Boston: Allyn & Bacon.

Benedict KM, Rivera MC & Antia SD. 2015. Instruction in Metacognitive Strategies to Increase Deaf and Hard-of-Hearing Students' Reading Comprehension. *Journal of Deaf Studies and Deaf Education* **20**(1):1-15.

Biesta G. 2012. Mixed Methods. In: Arthur J, Waring M, Coe R & Hedges L (eds), *Research Methods and Methodology in Education*. London: Sage. pp. 147-152.

Brokop F & Persall B. 2010. *Writing Strategies for Learners who are Deaf*. Canada: Nor Quest College Edmonton.

Bronfenbrenner U. 1979. *The Ecology of Human Development: Experiments by Nature and Design.* Cambridge: Harvard University Press.

Bruwer B. 2013. A sociolinguistic and socio-educational evaluation of the effectiveness of Bilingual and Biliterate education for Lower Primary Deaf learners in the Khomas Region of Namibia. Unpublished MA dissertation: University of the Free State.

Bruwer B & February P. 2019. The Evolution of Deaf Education in Namibia. In: Knoors H, Brons M & Marschark M (eds). *Deaf Education beyond the Western World*. New York: Oxford University Press. pp. 35-52

Calderon R. 2000. Parental Involvement in Deaf Children's Education Programs as a Predictor of Child's Language, Early Reading, and Social-Emotional Development. *Journal of Deaf Studies and Deaf Education* **5**(2):140-155.

Clark MD, Cue KR, Delgado NJ, Greene-Woods AN & Wolsey JA. 2020. Early Intervention Protocols: Proposing a Default Bimodal Bilingual Approach for Deaf Children. *Maternal and Child Health Journal* **24**:1339-1344.

Collins English Dictionary.1994. Glasgow: HarperCollins Publishers.

Creswell JW. 2014a. *Research design: Qualitative, quantitative & mixed methods approaches*. 4th ed. London: SAGA Publication, Inc.

Creswell JW. 2014b. *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. 4th ed. London: Pearson.

Creswell JW & Clark VLP. 2011. *Designing and Conducting Mixed Method Research*. 2nd ed. Los Angeles: Sage Publications.

Cummins J. 1981. The role of primary language development in promoting educational success for language minority students. In: California State Department of Education (ed), *Schooling and language minority students: A theoretical framework*. Los Angeles: Evaluation, Dissemination, and Assessment Center California State University. pp. 3-49.

Cummins J. 1996. *Negotiating Identities: Education for Empowerment in a Diverse Society*. Ontario: California Association for Bilingual Education.

Daly III EJ, Neugebauer S, Chafouleas S & Skinner CH. 2015. *Interventions for Reading Problems: Designing and Evaluation Effective Strategies.* 2nd ed. New York: The Guilford Press.

Dane FC. 2011. *Evaluation Research: Methodology for People Who Need to Read Research*. Thousand Oaks, CA: Sage.

Department of Education. 2001. *The Education White Paper 6 an Inclusive Education*. Pretoria, South Africa: Government Printers.

Doherty J & Hughes M. 2009. *Child Development: Theory and Practice 0-11*. Edinburg: Pearson Education.

Donald D, Lazarus S & Moolla N. 2014. *Educational Psychology in Social Context: Ecosystemic applications in Southern Africa.* 5th ed. South Africa: Oxford University Press

Dostal H & Wolbers KA. 2014. Developing Language and Writing Skills of Deaf and Hard of Hearing Students: A Simultaneous Approach. *Literacy Research and Instruction* **53**: 245-268.

Easterbrooks SR & Huston SG. 2008. The signed reading fluency of students who are deaf/hard of hearing. *Journal of Deaf Studies and Deaf Education* **13**(1):37-54.

Ellis J. 2011. *Evaluation of the project*: *Signs speak as loud as words*. Windhoek: Turning Points Consultancy.

Ellis J & Yates DD. 2010. *Deaf Education for Life: Linking Education and Employment*. *Conference Report and Follow-up Actions*. Okahandja, Namibia: Turning Points Consultancy.

Enns CJ. 2006. *A Language and Literacy Framework for Bilingual Deaf Education*. Winnipeg: University of Manitoba.

Finnegan RS. 2013. Linking Teacher Self-Efficacy to Teacher Evaluation. *Journal of Cross-Disciplinary Perspectives in Education* **6**(1):8-25.

Fitzgerald J. 1987. Research on revision in writing. *Review of Educational Research* **57**(4):481-506.

Garberoglio CL, Gobble ME & Cawthon SW. 2012. A National Perspective on Teachers' Efficacy Beliefs in Deaf Education. *Journal of Deaf Studies and Deaf Education* **17**(3):367-383.

Garcia O. 1997. Bilingual Education. In: Coulmas F (ed), *The Handbook of Sociolinguistics*. Oxford: Blackwell Publishers. pp. 404-420.

Garcia O & Cole D. 2014. Deaf Gains in the Study of Bilingualism and Bilingual Education. In: Dirksen H, Bauman L & Murray JJ (eds), *Deaf Gain: Raising the Stakes for Human Diversity*. Minneapolis: University of Minnesota Press. pp. 95-111.

Garcia O & Kleifgen JA. 2011. Bilingualism from Equity and Excellence in Minority Education. In: Van den Braden K, Van Avermaet P & Van Houtte M (eds), *Equity and Excellence in Education.* New York: Routledge. pp. 166-189.

Glazer M & Van Pletzen E. 2012. Inclusive Education for Deaf Students: Literacy Practices and South African Sign Language. *Southern African Linguistics and Applied Language Studies* **30**(11):25-37.

Gray C & MacBlain S. 2012. *Learning Theories in Childhood.* London: Sage.

Grushkin DA. 2017. Writing Signed Languages: What For? What From? *American Annals of the Deaf* **161**(5):509-527.

Haptonstall-Nykaza TS & Schick B. 2007. The Transition from Fingerspelling to English Print: Facilitating English Decoding. *Journal of Deaf Studies and Deaf Education* **12**(2):172-183.

Harris AD, Jessina MPH, McGregor C, Perencevich EL, Furuno JP, Zhu J, Peterson DE & Finkelstein J. 2006. The Use and Interpretation of Quasi-Experimental Studies in Medical Informatics. *Journal of the American Medical Informatics Association* **13**(1):16-23.

Herman R. 2015. Language Assessment of Deaf Learners. In: Knoors H & Marschark M (eds), *Educating Deaf Learners: Creating a Global Evidence Base.* New York: Oxford University Press. pp. 197-211.

Hermans D, Knoors H, Ormel E & Verhoeven L. 2007. Modeling Reading Vocabulary Learning in Deaf Children in Bilingual Education Programs. *Journal of Deaf Studies and Deaf Education* **13**(2):155-174.

Hermans D, Knoors H, Ormel E & Verhoeven L. 2008. The Relationship between the Reading and Signing Skills of Deaf Children in Bilingual Education Programs. *Journal of Deaf Studies and Deaf Education* **13**(4): 518-530.

Hermans D, Wauters L, De Klerk A & Knoors H. 2014. Quality of Instruction in Bilingual Schools for Deaf Children: Through the Children's Eyes and the Camera's Lens. In: Marschark M, Tang G & Knoors H. (eds), *Bilingualism and Bilingual Deaf Education.* New York: Oxford University Press. pp. 272-291.

Herrera-Fernández V, Puente-Ferreras A & Alvarado-Izquierdo JM. 2014. Visual Learning Strategies to Promote Literacy Skills in Prelingually Deaf Readers. *Revista Mexicana de Psicología* **31**(1):1-10.

Hoffmeister RJ & Caldwell-Harris CL. 2014. Acquiring English as a Second Language via Print: The Task for Deaf Children. *Cognition* **132**:229-242.

Holzinger D & Fellinger J. 2014. Sign Language and Reading Comprehension: No Automatic Transfer. In: Marschark M, Tang G & Knoors H (eds), *Bilingualism and Bilingual Deaf Education*. New York: Oxford University Press. pp. 102-133.

Howerton-Fox A & Falk JL. 2019. Deaf Children as 'English Learners': The Psycholinguistic Turn in Deaf Education. *Education Sciences* **9**(133): 1-30.

Hrastinski I & Wilbur RB. 2016. Academic Achievement of Deaf and Hard-of-Hearing Students in an ASL/English Bilingual Program. *Journal of Deaf Studies and Deaf Education* **21**(2):156-170.

Hult FM & Compton SE. 2012. Deaf Education Policy as Language Policy: A Comprehensive Analysis of Sweden and the United States. *Sign Language Studies* **12**(4):602-620.

Humphrey JH & Alcorn BJ. 2007. *So you want to be An Interpreter? An Introduction to Sign Language Interpreting*. 4th ed. Seattle: H & H Publishing Co.

Humphries T, Kushalnagar P, Mathur G, Napoli DJ, Padden C & Rathmann C. 2014. Ensuring language acquisition for deaf children: What linguists can do. *Language* **90**(2):31-52.

Humphries T, Kushalnagar P, Mathur G, Napoli DJ, Rathmann C & Smith S. 2019. Support for parents of deaf children: Common questions and informed evidence-based answers. *International Journal of Pediatric Otorhinolaryngology* **118**:134-142

Hussein A. 2009. The use of Triangulation in Social Sciences Research: Can qualitative and quantitative methods be combined? *Journal of Comparative Social Work* **1**:1-12.

Issaka CA. 2018. An Appraisal of Needs and Access of In-service Education and Training for Teachers in Basic 'Schools for the Deaf' in Ghana. *Educational Research and Reviews* **13**(19):644-673.

Johnson RB & Christensen L. 2014. *Education Research: Qualitative, Quantitative and Mixed Approaches*. 5th ed. California: Sage.

Knoors H & Marschark M. 2012. Language Planning for the 21st Century: Revisiting Bilingual Language Policy for Deaf Children. *Journal of Deaf Studies and Deaf Education* **17**(3):291-305.

Knoors H & Marschark M. 2014. *Teaching deaf learners: Psychological and developmental foundation*. New York: Oxford University Press.

Knoors H, Tang G & Marschark M. 2014. Bilingualism and Bilingual Deaf Education: Time to Take Stock. In: Marschark M, Tang G & Knoors H (eds), *Bilingualism and Bilingual Deaf Education.* New York: Oxford University Press. pp. 1-20.

Kuntze M, Golos D & Enns C. 2014. Rethinking Literacy: Broadening Opportunities for Visual Learners. *Sign Language Studies* **14**(2):203-224.

Kyle FE. 2015. Research Methods in Studying Reading and Literacy Development in Deaf Children who Sign. In: Orfanidou E, Woll B & Morgan G (eds), *Research Methods in Sign Language Studies: A Practical Guide*. Chichester: John Wiley & Sons Ltd. pp. 300-318.

Lane H, Hoffmeister R & Bahan B. 1996. *A Journey into the Deaf-World*. San Diego, California: Dawn Sign Press.

Lederberg AR, Schick B & Spencer PE. 2012. Language and Literacy Development of Deaf and Hard-of-Hearing Children: Successes and Challenges. *Developmental Psychology*. Advance online publication. doi: 10.1037/a0029558

Leedy PD & Ormrod JE. 2016. *Practical Research: Planning and Design*. 11th ed. London: Pearson.

Lo Bianco J. 2010. Language Policy and Planning. In: Hornberger NH & McKay SL (eds), *Sociolinguistics and language education*. Clevedon, GBR: Multilingual Matters. pp. 143-176.

Luckner JL & Cooke C. 2010. A Summary of Vocabulary Research with Students Who Are Deaf or Hard of Hearing. *American Annals of the Deaf* **155**(1):38-67.

Luckner JL & Urbach J. 2011. Reading Fluency and Students Who Are Deaf or Hard of Hearing: Synthesis of Research. *Communication Disorders Quarterly* **33**(4):230-241.

Luckner JL & Dorn B. 2017. Job Satisfaction of Teachers of Students who are Deaf or Hard of Hearing. *Journal of Deaf Studies and Deaf Education* **22**(3):336-345.

Magongwa L. 2010. Deaf Education in South Africa. *American Annals of the Deaf* **155**(4):493-496.

Mahbobi M & Tiemann TK. 2015. *Introductory Business Statistics with Interactive Spreadsheets*. Victoria, B.C.: BCcampus. Available at: https://opentextbc.ca/introductorybusinessstatistics/ [Accessed 16 July 2020].

Mahshie SN. 1995. *Educating deaf children bilingually*. Washington DC: Gallaudet University.

Malik M & ud Din N. 2019. Writing Skills Development among Students with Deafness at Elementary Level. *Bulletin of Education and Research* **41**(1):1-16.

Map of Namibia. Available at: https://tlarremore.wordpress.com/2017/09/21/ mispronouncing-namibia-a-country-in-southern-africa-is-a-sin-or-something/ [Accessed 15 July 2019].

Marschark M. 1997. *Psychological Development of Deaf Children*. New York. Oxford University Press.

Marschark M & Lee C. 2014. Navigating two languages in the classroom: goals, evidence and outcomes. In: Marschark M, Tang G & Knoors H (eds), *Bilingualism and Bilingual Deaf Education*. New York: Oxford University Press. pp. 213-241.

Mason D & Ewoldt C. 1996. Whole Language and Deaf Bilingual-Bicultural Education – Naturally! *American Annals of the Deaf* **141**(4):293-298.

Mayer C & Akamatsu T. 2003. Bilingualism and Literacy. In: Marschark M & Spencer PE (eds), *Deaf Studies, Language, and Education.* New York: Oxford University Press. pp. 136-147.

Mayer C & Leigh G. 2010. The changing context for sign bilingual education programs: issues in language and the development of literacy. *International Journal of Bilingual Education and Bilingualism* **13**(2):175-186.

Mayer C & Trezek B. 2019. Writing and Deafness: State of the Evidence and Implications for Research and Practice. *Education Sciences* **9**(185):1-16.

Mbumba N. 2007. An Overview of Deaf Education in Namibia. In: Report on Workshop on Deaf Education. Applying Bilingual-Bicultural Education Approach: Building Bridges in Education. Windhoek: Ministry of Education.

Mcilroy G. 2013. Sign Bilingualism in South Africa, Mowing Towards Dynamic Bilingualism? *International Symposium on Bilingualism*, Singapore. Available at: https://www.researchgate.net/publication/257931661_Sign_bilingualism_in_South_Africa_moving_towards_dynamic_bilingualism/download [Accessed 20 June 2019]

McQuarrie L & Parrila R. 2014. Literacy and Linguistic Development in Bilingual Deaf Children: Implications of the "and" for Phonological Processing. *American Annals of the Deaf* **159**(4):372-384.

Ministry of Education. 2013. *Sector Policy on Inclusive Education*. Windhoek: John Meinert Printing.

Ministry of Education. 2014a. *Draft Curriculum Framework for Inclusive Education: Supplement to the National Curriculum for Basic Education*. Okahandja: NIED.

Ministry of Education. 2014b. *Namibian Sign Language Syllabus Grades 1-3*. Okahandja: NIED

Ministry of Education, Arts and Culture. 2015. *Written English Syllabus Grades 1-3*. Okahandja: NIED

Morrison TG & Wilcox B. 2013. *Developing Literacy: Reading and Writing To, With and By Children*. New Jersey: Pearson.

Moses AM, Golos DB & Holcomb L. 2018. Creating and Using Educational Media with a Cultural Perspective of Deaf People. *Language Arts* **96**(1):67-71.

Motshega A. 2016. Early Childhood Development. In: *Post-Conference Report. Deaf Education: Empowering Deaf Persons in Africa through Knowledge*, Johannesburg: DeafNET Africa Conference.

Mouton J. 2011. *How to succeed in your Master's and Doctoral Studies: A South African Guide and Resource Book*. Pretoria: Van Schaik.

Nambira G. 2007. An Overview of Deaf Education in Namibia. In: Report on Workshop on Deaf Education. Applying Bilingual-Bicultural Education Approach: Building Bridges in Education. Windhoek: Ministry of Education.

Namukoa A. 2012. Instruction in a Primary Language: A Strategy for Teaching Children who are Deaf. *The African Symposium* **12**(2):51-58.

Nel NM, Tlale LDN, Engelbrecht P & Nel M. 2016. Teachers' perceptions of education support structures in the implementation of inclusive education in South Africa. *KOERS – Bulletin for Christian Scholarship* **81**(3). Available at: http://doi.org/10.19108/KOERS.81.3.2249 [Accessed on 22 February 2021].

New Era Newspaper. 2016. Deaf people still marginalized 26 years after independence, 18 March. Available at: https://neweralive.na/posts/deaf-people-marginalized-26-years-independence [Accessed: 24 July 2018].

Ngobeni WP, Maimane JR & Rankhumise MP. 2020. The effect of limited sign language as barrier to teaching and learning among Deaf learners in South Africa. *South African Journal of Education* **40**(2):1-7.

Nieuwenhuis J. 2007. Qualitative research design and data gathering techniques. In: Maree K (ed), *First Steps in Research*. Paarl: Van Schaik. pp. 70-97.

Ntinda K, Thwala SK & Tfusi B. 2019. Experiences of Teachers of Deaf and Hard-of-Hearing Students' in a Special Needs School: An Exploratory Study. *Journal of Education and Training Studies* **7**(7):79-89.

Omona J. 2013. Sampling in Qualitative Research: Improving the Quality of Research Outcomes in Higher Education. *Makerere Journal of Higher Education* **4**(2):169-185.

O'Neill R. 2017. Bilingual Deaf Education: Language Policies, Linguistic approaches and Education Models in Europe. In: Reuter K (ed), *UNCRPD Implementation in Europe: A Deaf Perspective.* Article 24: Education. European Union of the Deaf Brussels. pp. 86-109.

Ormel E & Giezen M. 2014. Bimodal Bilingual Cross-Language Interaction: Pieces of the Puzzle. In: Marschark M, Tang G & Knoors H (eds), *Bilingualism and Bilingual Deaf Education*. New York: Oxford University Press. pp. 74-101.

Ormrod JE. 2006. *Educational Psychology: Developing Learners.* 5th ed. New Jersey: Pearson Education.

Ortiz RW & Ordoñez-Jasis R. 2010. Leyendo Juntos (Reading Together): New direction for Latino Parents' Early Literacy Involvement. In: Strickland DS (ed), *Essential Reading on Early Literacy*. Newark: International Reading Association. pp. 129-146.

Parkin I. 2016. Sign Language and Education. In: *Post-Conference Report. Deaf Education: Empowering Deaf Persons in Africa through Knowledge*, Johannesburg: DeafNET Africa Conference.

Patton MQ. 2002. *Quality Research and Evaluation Methods*. 3rd ed. London: Sage.

Petitto LA, Langdon C, Stone A, Andriola D, Kartheiser G & Cochran C. 2016. Visual sign phonology: insights into human reading and language from a natural soundless phonology. *Wiley Periodicals, Inc.* **7**(1):366-381.

Pietersen J & Maree K. 2007. Statistical analysis II: Inferential Statistics. In: Maree K (ed). *First Steps in Research*. Paarl: Van Schaik. pp. 198-213.

Pizzo L & Chilvers A. 2019. Assessment of Language and Literacy in Children Who Are d/Deaf and Hard of Hearing. *Journal of Education Sciences* **9**:1-15.

Plaza-Pust C. 2014. Language Development and Language Interaction in Sign Bilingual Language Acquisition. In: Marschark M, Tang G & Knoors H (eds). *Bilingualism and Bilingual Deaf Education*. New York: Oxford University Press. pp. 23-53.

Polat F. 2003. Factors Affecting Psychosocial Adjustment of Deaf Students. *Journal of Deaf Studies and Deaf Education* **8**(3):325-339.

Puente A, Alvarado JM & Herrera V. 2006. Fingerspelling and Sign Language as Alternative Codes for Reading and Writing Words for Chilean Deaf Signers. *American Annals of the Deaf* **151**(3):299-310.

Qi S & Mitchell RE. 2012. Large-scale academic achievement testing of deaf and hard of hearing students: Past, present and future. *Journal of Deaf Studies and Deaf Education* **17**(1):1-18.

Reagan T. 2001. Language Planning and Policy. In: Lucas C (ed). *The Sociolinguistics of Sign Languages*. Cambridge: Cambridge University Press. pp. 145-180.

Reagan T. 2008. South African Sign Language and language-in-education policy in South Africa. *Stellenbosch Papers in Linguistics* **38**:165-190.

Rosa EM & Tudge J. 2013. Urie Bronfenbrenner's Theory of Human Development: Its Evolution from Ecology to Bioecology. *Journal of Family Theory & Reviews* **5**(4):243-258.

Ross E & Deverell A (eds). 2010. *Health, illness and disability: psychological approach*. 2nd ed. Pretoria: Van Schaik.

Ryen A. 2011. Ethics and Qualitative Research. In: Silverman D (ed), *Qualitative Research: Issues of Theory Methods and Practices*. London: Sage Publication. pp. 416-438.

Salkind NJ. 2004. *The Introduction to Theories of Human Development*. Thousand Oaks, CA: SAGA Publications.

Sardar EH & Kadir RA. 2012. Mothers' Attitudes and Self-Esteem among Deaf Children in Iranian High Schools. *Asian Social Science* **8**(2):147-152.

Schirmer BR & McGough SM. 2005. Teaching Reading to Children who are Deaf: Do the Conclusions of the National Reading Panel Apply? *Review of Educational Research* **75**(1):83-117.

Schirmer BR & Williams C. 2003. Approaches to teaching reading. In: Marschark M & Spencer PE (eds), *Oxford handbook of deaf studies, language, and education*. New York: Oxford University Press. pp. 110-122.

Shohamy E. 2016. *Language Policy: Hidden Agendas and New Approaches*. London: Routledge.

Singleton JL & Morgan DD. 2006. Natural Signed Language Acquisition within the Social Context of the Classroom. In: Schick B, Marschark M & Spencer PE (eds), *Advances in the Sign Language Development of Deaf Children*. New York: Oxford University Press. pp. 344-370.

Spencer PE & Marschark M. 2010. *Evidence-Based Practice in Educating Deaf and Hard-of-Hearing Students*. New York: Oxford University Press.

Stander M & Mcilroy G. 2017. Language and culture in the Deaf community: a case study in a South African special school. *Per Linguam* **33**(1):83-99.

Stewart D & Clarke B. 2003. *Literacy and your deaf child: what every parent should know*. Washington, DC: Gallaudet University Press.

Stewart DA & Kluwin TN. 2001. *Teaching Deaf and Hard of Hearing Students: Content, Strategies and Curriculum*. Boston: Allyn and Bacon.

Storbeck C. 2016. Educating the Deaf and Hard-of-Hearing Learners. In: Landsberg E, Kruger D & Swart E (eds), *Addressing Barriers to Learning. A South African Perspective*. 3rd ed. Pretoria: Van Schaik. pp. 429-447.

Svartholm K. 2014. *35 years of Bilingual Deaf Education – and then*. Stockholm: Stockholm University

Swanwick RA. 2016. Deaf Children's Bimodal Bilingualism and Education. *Language Teaching* **49**(1):1-34.

Swanwick R. 2017. Translanguaging, Learning and Teaching in Deaf Education. *International Journal of Multilingualism* **14**(3):233-249.

Swanwick R, Hender O, Dammeyer J, Kristoffersen A, Salter J & Simonsen E. 2014. Shifting contexts and practices in sign bilingual education in Northern Europe: Implication for professional development and training. In: Marschark M, Tang G & Knoors H (eds), *Bilingualism and Bilingual Deaf Education*. New York: Oxford University Press. pp. 292-310.

Swart E & Pettipher R. 2016. A framework for understanding Inclusion. In: Landsberg E, Kruger D & Swart E (eds), *Addressing Barriers to Learning. A South African Perspective*. 3rd ed. Pretoria: Van Schaik. pp. 3-26.

Swift O. 2016. *Report on Performance of Deaf Learners in Schools for the Deaf in South Africa in 2016.* Cape Town: DeafSA.

The Citizen. 2017. Sign Language to become official in SA, 27 July. Available at: http://citizen.co.za/news/south-africa/1588269/sign_language_to_become_official_in_sa/ [Accessed: 10 April 2019]

The Citizen. 2018. It's official: SA sign language recognised, 02 March. Available at: http://citizen.co.za/news/south-africa/1588269/it's_official_SA_sign_language_recognised [Accessed: 15 April 2019]

Van Staden A. 2013. An evaluation of an intervention using Sign Language and multi-sensory coding to support word learning and reading comprehension of deaf signing children. *Children Language Teaching and Therapy* **29**(3):305-318.

Van Staden A, Badenhorst G & Ridge E. 2009. The benefits of Sign Language for deaf learners with language challenges. *A Journal for Language Learning* **25**(1):44-60.

Veditz G. n.d. AZ Quotes.com. Available at: https://www.azquotes.com/quote/1218136 [Accessed 29 July 2021].

Walker EA & Tomblin JB. 2014. The Influence of Communication Mode on Language Development in Children with Cochlear Implants. In: Marschark M, Tang G & Knoors H

(eds). *Bilingualism and Bilingual Deaf Education.* New York: Oxford University Press. pp. 134-151.

Wauters L & De Klerk A. 2014. Improving Reading Instruction to Deaf and Hard-of-Hearing Students. In: Marschark M, Tang G & Knoors H (eds). *Bilingualism and Bilingual Deaf Education.* New York: Oxford University Press. pp. 242-271.

West-Burnham J. 1997. *Managing Quality in Schools: Effective Strategies for Quality Based School Improvement*. 2nd ed. London: Pearson.

Wiium V. 2007. An overview of Deaf Education in Namibia. In: *Report on Workshop on Deaf Education. Applying Bilingual-Bicultural Education Approach: Building Bridges in Education.* Windhoek, Namibia: Ministry of Education.

Williams J, Darcy I & Newman S. 2015. Fingerspelling and Print Processing Similarities in Deaf and Hearing Readers. *Journal of Language and Literature* **6**(1):56- 65.

Williams C & Mayer C. 2015. Writing in Young Deaf Children. *Review of Educational Research* **85**(4):630-666.

WK Kellogg Foundation. 2001. *Logic Model Development Guide*. Battle Creek, MI: WK Kellogg Foundation. Available at http://www.wkkf.org [Accessed 20 October 2011].

Wolbers KA. 2008. Using Balance and Interactive Writing Instruction to Improve the Higher Order and Lower Order Writing Skills of Deaf Students. *Journal of Deaf Studies and Deaf Education* **13**(2):257-277.

Wolbers KA, Bowers LM, Dostal HM & Graham SC. 2014. Deaf writers' application of American Sign Language knowledge to English. *International Journal of Bilingual Education and Bilingualism* **17**(4):410-428.

Wolbers KA, Dostal HM & Bowers LM. 2012. "I Was Born Full Deaf." Written Language Outcomes after 1 Year of Strategic and Interactive Writing Instruction. *Journal of Deaf Studies and Deaf Education* **17**(1):19-38.

World Federation of the Deaf. 2007. *A Policy Statement: Education Rights for deaf Children*. Helsinki: WFD. Available at: https://www.equalrightstrust.org/sites/default/files/ertdocs//policy_child_ed.pdf [Accessed 20 August 2019].

Zhou M & Brown D. 2015. *Educational Learning Theories.* 2nd ed. Education Open Textbooks. Galileo Open Learning Material. Available at: http://oer.galileo.usg.edu/education-textbooks/1 [Accessed 3 May 2019].

ADDENDUM A: ETHICS CLEARANCE LETTER

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

Faculty of Education
Ethics Office

Room 12
Winkie Direko Building
Faculty of Education
University of the Free State
P.O. Box 339
Bloemfontein 9300
South Africa

T: +27(0)51 401 9922
F: +27(0)51 401 2010

www.ufs.ac.za
BarclayA@ufs.ac.za

16 April 2014

ETHICAL CLEARANCE APPLICATION:

COGNITIVE LINGUISTIC PROCESSING OF L1 AND L2 LEARNERS WITH TYPICAL AND ATYPICAL PATTERNS OF DEVELOPMENT

Dear Dr van Staden

With reference to your application for ethical clearance with the Faculty of Education, I am pleased to inform you on behalf of the Ethics Board of the faculty that you as project leader and the postgraduate students working on this project have been granted ethical clearance for your research (2014 to 2019).

Your ethical clearance number, to be used in all correspondence, is:

UFS-EDU-2013-0074

This ethical clearance number is valid for research conducted for six years from issuance. Should you require more time to complete this research, please apply for an extension in writing.

We request that any changes that may take place during the course of your research project be submitted in writing to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research project.

Yours sincerely,

Andrew Barclay
Faculty Ethics Officer

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

ADDENDUM B: PERMISSION LETTER TO THE DIRECTOR OF THE KHOMAS EDUCATION REGION

27 September 2016

Mr G.N. Vries

Director of Khomas Education Region

Ministry of Education

Namibia

Dear Mr Vries

REQUEST FOR PERMISSION TO DO RESEARCH IN THE KHOMAS REGION

I am Beausetha J Bruwer, a PhD student at the University of the Free State. My area of specialisation is Deaf Education and I am planning to do research on the implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia. I wish to apply for permission to conduct my research at NISE School for Hearing Impaired learners in Windhoek.

The objectives of the research will be the following:

- To explore challenges, face in implementing a biliteracy programme at a deaf school;
- To determine the language ability of the deaf learners;
- To explore the roles of teachers and parents in the support of biliteracy for deaf learners; and
- To determine how literacy skills in deaf learners can improve after the application of an intervention programme.

The research constitutes a pre-test post-test study that will determine the level of language skills of deaf learners in Namibian Sign Language and Written English. This will be done through tailor-made diagnostic tests. Pre-tests will be conducted on the junior primary learners. An intervention programme will be directed at the school for one academic year. The researcher plans to visit the school every week for one academic year and work with the teachers on lesson preparations, lesson presentations, material development and methods of assessment. After the intervention programme

post-tests will be conducted again on the same group of learners with the same diagnostic tests. All the junior primary learners will be involved in the study to give equal exposure and opportunity to all the learners. Interviews will be held with the school management, teachers and the hostel matrons.

This research will contribute towards a better understanding of the psychology of educating deaf learners. The value of the research lies in the benefit it will have to deaf learners in teaching them to be biliterate, leading to better academic performance. The results of this study will envisage a programme that contributes to the elimination of poor literacy skills in deaf learners. Teachers will gain pedagogical knowledge on teaching deaf learners to be biliterate.

I kindly request your permission to do my research at NISE, School for Hearing Impaired learners in Windhoek.

Yours in Education

Beausetha J Bruwer

0812796507

ADDENDUM C: PERMISSION GRANTED BY THE DIRECTOR OF THE KHOMAS EDUCATION REGION

REPUBLIC OF NAMIBIA

KHOMAS REGIONAL COUNCIL

DIRECTORATE OF EDUCATION, ARTS AND CULTURE

Tel: [09 264 61] 293 4356
Fax: [09 264 61] 231 367/248 251
Enquiries: Ms TL Shivute

Private Bag 13236
WINDHOEK

File No: 12/3/10/1

Beausetha J. Bruwer
Sigh Language Lecturer
UNAM (081 279 6507)
Windhoek

REQUEST FOR PERMISSION TO DO RESEARCH IN KHOMAS REGION

Your letter dated 27 September 2016 on the above subject refers.

Permission is hereby given to you to carry out your PhD dissertation research under the topic: "The implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia" at the NISE School for Hearing Impaired under the following conditions:

- The Principal of the school to be visited must be contacted before the visit and agreement should be reached between you and the Principal.
- The school programme should not be interrupted.
- Teachers, learners, Hostel Matrons and parents who will take part in this research will do so voluntarily and consent must be acquired from parents for interviewing learners.
- The Directorate of Education, Arts and Culture should be provided with a copy of your thesis/dissertation after completion of the project.

We wish you all the best with your studies.

Yours sincerely

Gerard N. Vries
Director of Education, Arts and Culture

MINISTRY OF EDUCATION ARTS AND CULTURE
PRIVATE BAG 13236 WINDHOEK
02-11-2016
DIRECTOR
KHOMAS REGION

ADDENDUM D: PERMISSION LETTER TO THE PRINCIPAL OF NISE SCHOOL FOR HEARING IMPAIRED LEARNERS

9 November 2016

Mr Oberholzer

Principal of NISE: School for Hearing Impaired

Ministry of Education

Namibia

Dear Mr Oberholzer

REQUEST FOR PERMISSION TO DO RESEARCH AT NISE: SCHOOL FOR HEARING IMPAIRED

I have been granted permission by the Director of the Khomas Region to do research at your school. The plan is to do research on the implementation of a Bilingual-Bicultural literacy programme for deaf learners in the junior primary phase.

The objectives of the research will be the following:

- To explore challenges, face in implementing a biliteracy programme at a deaf school;
- To determine the language ability of the deaf learners;
- To explore the roles of teachers and parents in the support of biliteracy for deaf learners; and
- To determine how literacy skills in deaf learners can improve after the application of an intervention programme.

The research constitutes a pre-test post-test study that will determine the level of language skills of deaf learners in Namibian Sign Language and Written English. This will be done through tailor-made diagnostic tests. Pre-tests will be conducted on the junior primary learners. An intervention programme will be directed at the school for one academic year. The researcher plans to visit the school every week for one academic year and work with the teachers on lesson preparations, lesson presentations, material development and methods of assessment. After the intervention programme

post-tests will be conducted again on the same group of learners with the same diagnostic tests. All the junior primary learners will be involved in the study to give equal exposure and opportunity to all the learners. Interviews will be held with the school management teachers and hostel matrons.

This research will contribute toward a better understanding of the psychology of educating deaf learners. The value of the research lies in the benefit it will have to deaf learners in teaching them to be biliterate, leading to better academic performance. The results of this study will envisage a programme that contributes to the elimination of poor literacy skills in deaf learners. Teachers will gain pedagogical knowledge on teaching deaf learners to be biliterate.

Mr Oberholzer, I kindly request your permission to do my research at NISE, School for Hearing Impaired. I assure you that there will be no interference with the everyday school programme, as I am more than willing to work with you and the HOD for junior primary for the best approach to do the research. I also assure you that the research subjects will be treated in a respectful manner and I guarantee absolute anonymity and confidentiality.

Yours in Education

Beausetha J Bruwer

ADDENDUM E: PERMISSION GRANTED BY THE PRINCIPAL OF THE SELECTED SCHOOL

SCHOOL FOR THE HEARING IMPAIRED

P O Box 10793 KHOMASDAL, WINDHOEK
TEL: +26461-21-2659 FAX: +26461-21-8307
NATIONAL INSTITUTE FOR SPECIAL EDUCATION (NISE)

Enquiries: Mr. M.A. Oberholzer
Email: maozer94@gmail.com
Cell no:

23 November 2016

TO: Ms. B.J. Bruwer
Namibia Sign Language Lecture
University of Namibia(UNAM)

Subject: Research at the School for Hearing Impaired

Dear Madam

Your letter dated 09th November 2016 has reference.

Working close with Ms.B.J.Bruwer over the past three years as a UNAM lecturer she always interested in our school. She also always assists the novice teachers with the necessary equipment on how to better their educational results.

Therefore her expertise and experience is always welcome at our school.

……..
Mr. Manuel A. Oberholzer
Principal: Hearing Impaired School

MINISTRY OF EDUCATION
THE PRINCIPAL
HEARING IMPAIRED SCHOOL
PO BOX 10793 KHOMASDAL
2016 -11- 23
KHOMAS REGION

All official correspondence should be addressed to the principal

ADDENDUM F: PARENTAL CONSENT

Title: The implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia

Informed consent form for parents/guardians

Introduction

The school was selected to be part of an intervention programme that will focus on the implementation of a Bilingual-Bicultural literacy programme for deaf learners in the junior primary phase. This programme will benefit learners greatly in teaching them to read and write. It will also benefit teachers in that it will gives guidance on how to teach learners Namibian Sign Language and Written English.

Purpose of the study/programme

The main purpose of the study is to find the most suitable method of teaching deaf learners to be literate in both NSL and Written English. Among other things, the study also aims to train teachers and matrons to understand deaf learners (how they are learning) better and how they should be taught, but most importantly, how they can be helped to become literate, being able to read and write grade-level materials.

Participants selected

All teachers and learners for the junior primary classes will be included. As the majority of deaf learners at the intended school reside in the hostel, matrons will be included in the study, as they stand in as parents of the children at the hostel. The HOD and the school Principal will also be included.

What you will be asked to do

You must be prepared to give your written consent, by signing this form, that your child can be included in this study.

Voluntary Participation

You are hereby informed that participation is voluntary. This means that you can decide for your child to participate or not participate. The child will not be penalized for not participating in the study.

Withdraw from the study

You are free to decline for your child to participate or to withdraw your child from the study, without your child being punished in any way.

Risks

Please note no harm will come to your child by participating in this study.

Benefits
Your child can benefit from the programme by improving his/her Namibian Sign Language and Written English language skills.

Confidentiality
Your child's name and other personal details will not be revealed to anyone at any point during the conduct of the study and during the reporting of the research findings.

By signing below, you have decided that your child will be a part of this study.

Please do not hesitate to contact the researcher in case you require more information.

Beausetha Bruwer

_____

Certificate of consent to be signed by parents and guardians	
I have read this information (or had the information read to me). I have had my questions answered and know that I can ask questions later if I have them	
Name of the child	
Name of parent/s/legal guardian	
Signature	
Cell Number	
Date	

ADDENDUM G: TEACHERS' CONSENT

Title: The implementation of a Bilingual-Bicultural literacy programme for deaf learners in Namibia

Informed consent form for teachers

Introduction

The school was selected to be part of an intervention programme that will focus on the implementation of a Bilingual-Bicultural literacy programme for deaf learners in the junior primary phase. This programme will benefit learners greatly in teaching them to read and write. It will also benefit teachers in that it gives guidance on how to teach learners Namibian Sign Language and Written English.

Purpose of the study/programme

The main purpose of the study is to find the most suitable method of teaching deaf learners to be literate in both NSL and Written English. Among other things, the study also aims to train teachers and matrons to understand deaf learners (how they are learning) better and how they should be taught, but most importantly, how they can be helped to become literate, being able to read and write grade-level materials.

Participants selected

All teachers and learners for the junior primary classes will be included. As the majority of deaf learners at the intended school reside in the hostel, matrons will be included in the study, as they stand in as parents of the children at the hostel. The HOD and the school Principal will also be included.

What you will be asked to do

You will be asked to teach the lessons that are prepared beforehand, complete a questionnaire, avail yourself for a one on one interview, avail yourself for focus group discussion/workshops, avail yourself for classroom observations**, give your consent that any pictures that will be taken in your class (from your teaching materials/you yourself teaching) can be used for the purpose of reporting and writing a thesis/dissertation.**

Voluntary Participation

You are hereby informed that your participation is voluntary. This means that you can decide to participate or not participate. You will not be penalized for deciding not to participate in the study.

Withdrawal from the study

You are free to decline to participate or to withdraw, without being punished in any way, from the study once participation has begun.

Risks

Please note that you are not expected to experience psychological, emotional, spiritual and physical harm because the study will be done in a respectful manner. No harm will come to you by participating in this study.

Benefits

You can benefit from the study in that you will receive in-service training. Lessons will be prepared for you that will decrease your workload. You will be involved in discussions that will focus on the teaching of the deaf learner. These discussions will allow you to grow as a teacher for the deaf.

Confidentiality

Your participation, responses to questionnaires, interview questions, focus-group discussions, and lesson presentations will be confidential. This means that your name and other personal details shall not be revealed to anyone at any point during the conduct of the study and during the reporting of the research findings. In addition, access to your responses and voice recordings (which shall be erased during the study) will be restricted to your response only. To ensure that this takes place, your responses to the questionnaire and interview questions will be stored in a lockable room that will be accessible to the researcher only.

Certificate of consent to be signed by participants.

I have read this information (or had the information read to me). I have had my questions answered and know that I can ask questions later if I have them.

I agree to take part in this study.

Name _____Signature _____

Date _____

ADDENDUM H: OBSERVATION SHEET

Observation Sheet

Class Group Participants: _____

Date and Time: _____

Subject: _____

Observation	Comment
Classroom Environment • Teaching materials • Posters • Flashcards • Prompts • Exposure to reading and writing materials	
Teaching • Method • Professionalism • Language • Activities • Engagement • Response to learners	
Learning • Responds • Enthusiasm • Participation • Understanding	
Additional Observations	
Reflection	

ADDENDUM I: INTERVIEW SHEET FOR SCHOOL MANAGEMENT

Interview Questions to School Management

1. How would you describe the literacy level of the junior primary learners at the school?
2. What can be done to improve the academic performance of all deaf learners at your school?
3. What programmes does the school have in place to support the academic performance of the learners at the school?
4. How do you manage teachers teaching the programme/s at the school?
5. How would you describe quality education?
6. How do you encourage quality education at your school?
7. What criteria does the school have in place for employing teachers?
8. Just how would you describe the attitude of the junior primary teachers on the Bilingual-Bicultural approach to teaching deaf learners?
9. What challenges does your school experience in regards to the implementation of the Bilingual-Bicultural approach?
10. How has the Bilingual-Bicultural literacy programme changed teachers and learners?
11. How would you describe the support that the school is receiving in the implementation of this approach?
12. What do you think is needed to ensure the success of a Bilingual-Bicultural literacy programme for deaf learners?
13. What extra support is the school providing to teachers teaching junior primary learners?
14. What do you do as management to cultivate a positive and hardworking attitude in your teachers?
15. What extra support is the school providing to hostel matrons working with the younger deaf learners?
16. How would you describe parental participation at your school?
17. What extra support is the school providing to parents of junior primary learners?
18. What is your vision for the learners at your school?

ADDENDUM J: INTERVIEW SHEET FOR TEACHERS

Interview Questions to Teachers

1. What do you think is needed to ensure the success of a Bilingual-Bicultural literacy programme for deaf learners?
2. What challenges did you experience before the Bilingual-Bicultural literacy intervention programme?
3. How did the Bilingual-Bicultural literacy intervention programme benefit you?
4. How would describe a favourable learning environment for deaf learners to become biliterate?
5. What would you consider as key teacher qualities to effectively teach deaf learners?
6. Explain the type of support that you are receiving from other professionals, including subject experts?
7. How did your learners benefit from the Bilingual-Bicultural literacy programme?
8. How would you describe parental involvement in your class?
9. What contribution do you think the parents of deaf learners can make to their children's' education?
10. How do you think parents can be involved more in their children's education?

ADDENDUM K: NSL ASSESSMENT INSTRUMENT FOR GRADE 1

Namibian Sign Language Test

Name and surname: _____

Grade: 1

Test date: _____

Learner's gender: _____

CLaSH attendance: _____

Picture Signing	20	
Sign Identification	20	
Arranging Picture Stories.	20	
Expression and Communication	20	
Observation Comprehension	20	
Total	100	

Picture Signing

The pictures below will be on flashcards. The learner should be able to sign what is in the picture within 3 counts. If the learner is not able to sign what is in the picture within 3 counts, the assessor should move on to the next picture.

/20

Note
In the case where the learner will sign BOY and GIRL as BROTHER and SISTER, the assessor shall regard it as correct. In the case where the learner will sign NURSE and TEACHER as WOMAN only, the assessor will regard it as wrong. A clear differentiation needs to be made between the above signs.


A B C's

Sign Identification

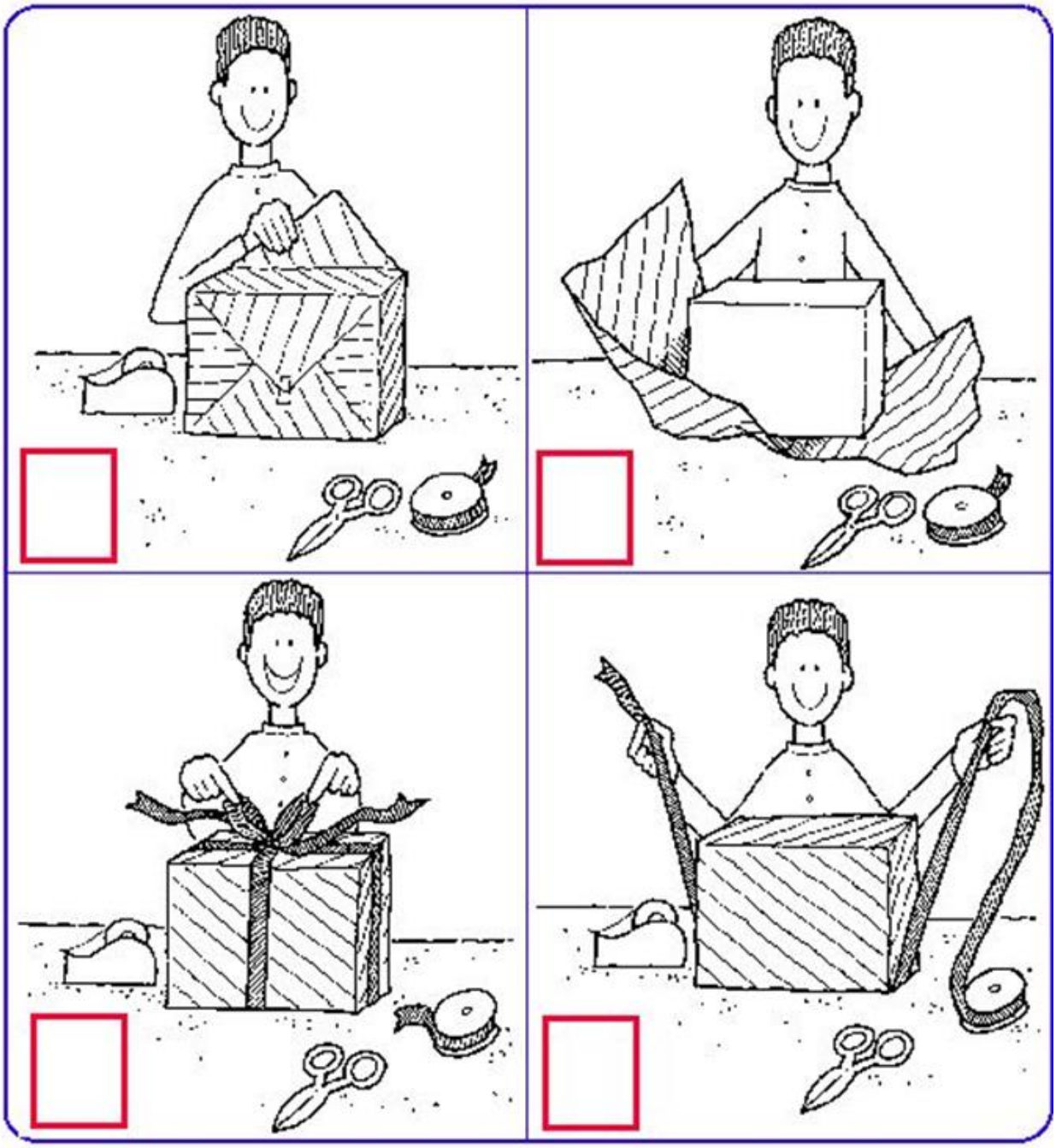
The pictures below will be on flashcards. All the flashcards will be randomly in front of the learner. The assessor will give a sign for one of the pictures in front of the learner. The learner should point to the correct picture that the assessor signed.

/20

Arranging Picture Stories

The assessor will hand out the picture stories to the learner one at a time. The pictures of each picture story will be in the form of flashcards. The assessor will explain to the learner to arrange the picture in the correct order.

/20



Expression and Communication

The assessor will hand out the pictures to the learner one at a time. The learner will be given time to look at the picture. The learner will be asked to sign what is happening in the picture. The learner will be awarded marks if the WHO, WHAT, WHERE, HOW questions are answered in what he / she is signing.

/20

Observation and Comprehension

A signed story will be played to the learner. 10 questions will be asked, through Sign Language, to the learner based on the story. The learner will respond through signing. The assessor will transcribe the learner's answer immediately, to be marked. The questions are written in capital letters as an indication that the assessor should sign the question to the learner as indicated. It is important that the learner's answer at least contains the underlined content. See answers.

Flashcard pictures based on the story will be handed out to the learner. The story will be played a second time. The learner will be required to place the events in the pictures in the correct order as the story is signed.

/20

Questions

1. FAMILY STAY WHERE
   Keetmans Regions in a small house
2. FAMILY MEMBERS WHO
   Father, mother, boy and girl
3. FATHER DO WHAT
   Father fished
4. MOTHER COOK WHAT
   Mother cook vegetable soup
5. FATHER FISH CATCH HOW MANY
   Father caught 5 fish
6. FATHER FISH SELL HOW MANY
   Father sold 4 fish
7. FATHER FISH HOME BRING HOW MANY
   Father brought no fish home
8. FATHER HOME BRING WHAT
   Father brought sausages home
9. MOTHER FOOD TASTE HOW
   Mother's food taste delicious / good
10. MOTHER FORGOT WHAT
    Mother forgot to put in the sausages.

ADDENDUM L: NSL ASSESSMENT INSTRUMENT FOR GRADE 2

Namibian Sign Language Test

Name and surname: _____

Grade: 2

Test date: _____

Learner's gender: _____

CLaSH attendance: _____

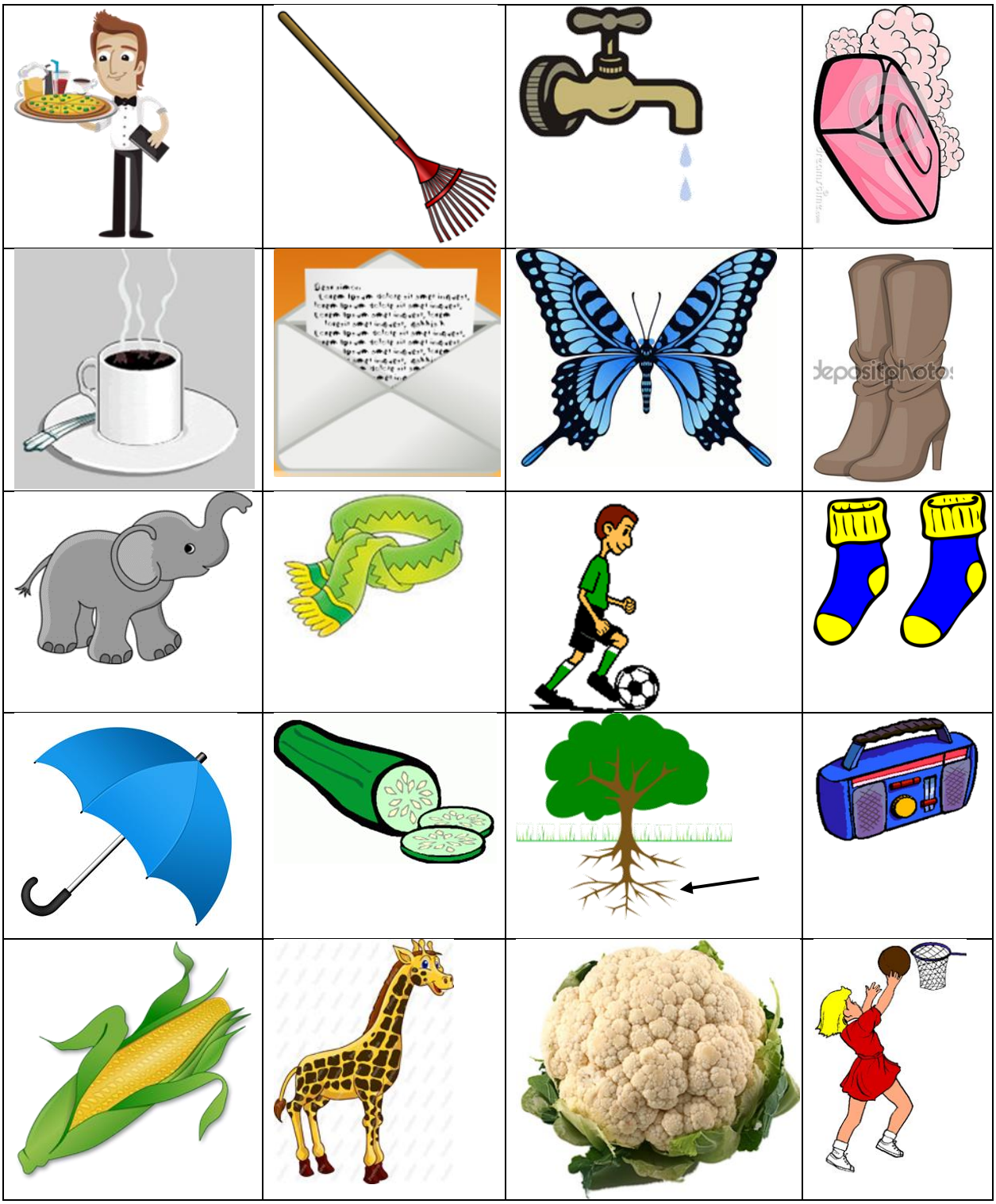
Picture Signing	20	
Sign Identification	20	
Arranging Picture Stories.	20	
Expression and Communication	20	
Observation Comprehension	20	
Total	100	

Picture Signing

The pictures below will be on flashcards. The learner should be able to sign what is in the picture within 3 counts. If the learner is not able to sign what is in the picture within 3 counts, the assessor should move on to the next picture.

/20

Note
In the case where the learner will sign BOY and GIRL for the boy and girl playing soccer and netball the assessor can guide the learner by asking BOY DO WHAT, GIRL DO WHAT.


depositphotos

Sign Identification

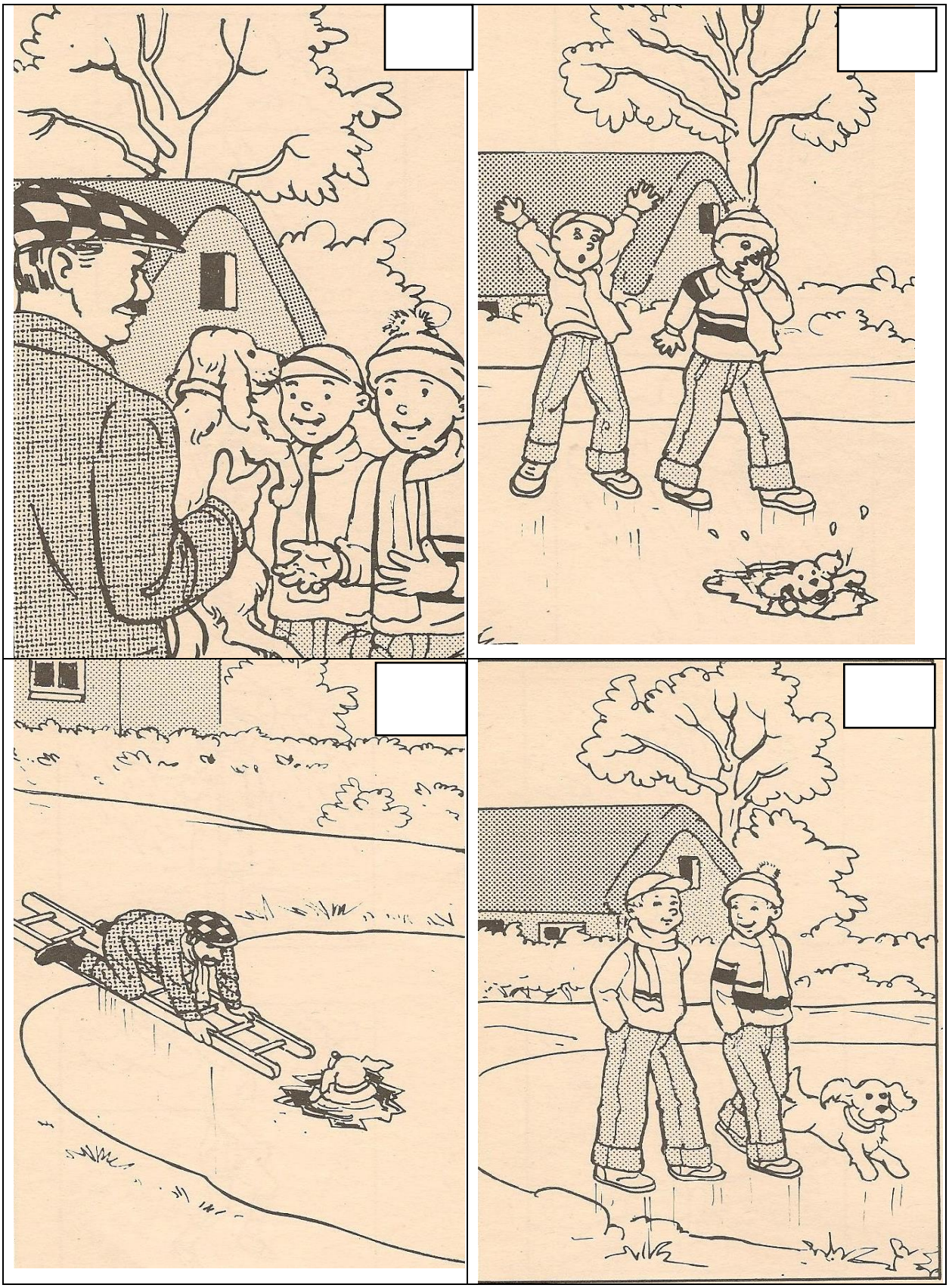
The pictures below will be on flashcards. All the flashcards will be randomly in front of the learner. The assessor will give a sign for one of the pictures in front of the learner. The learner should point to the correct picture that the assessor signed.

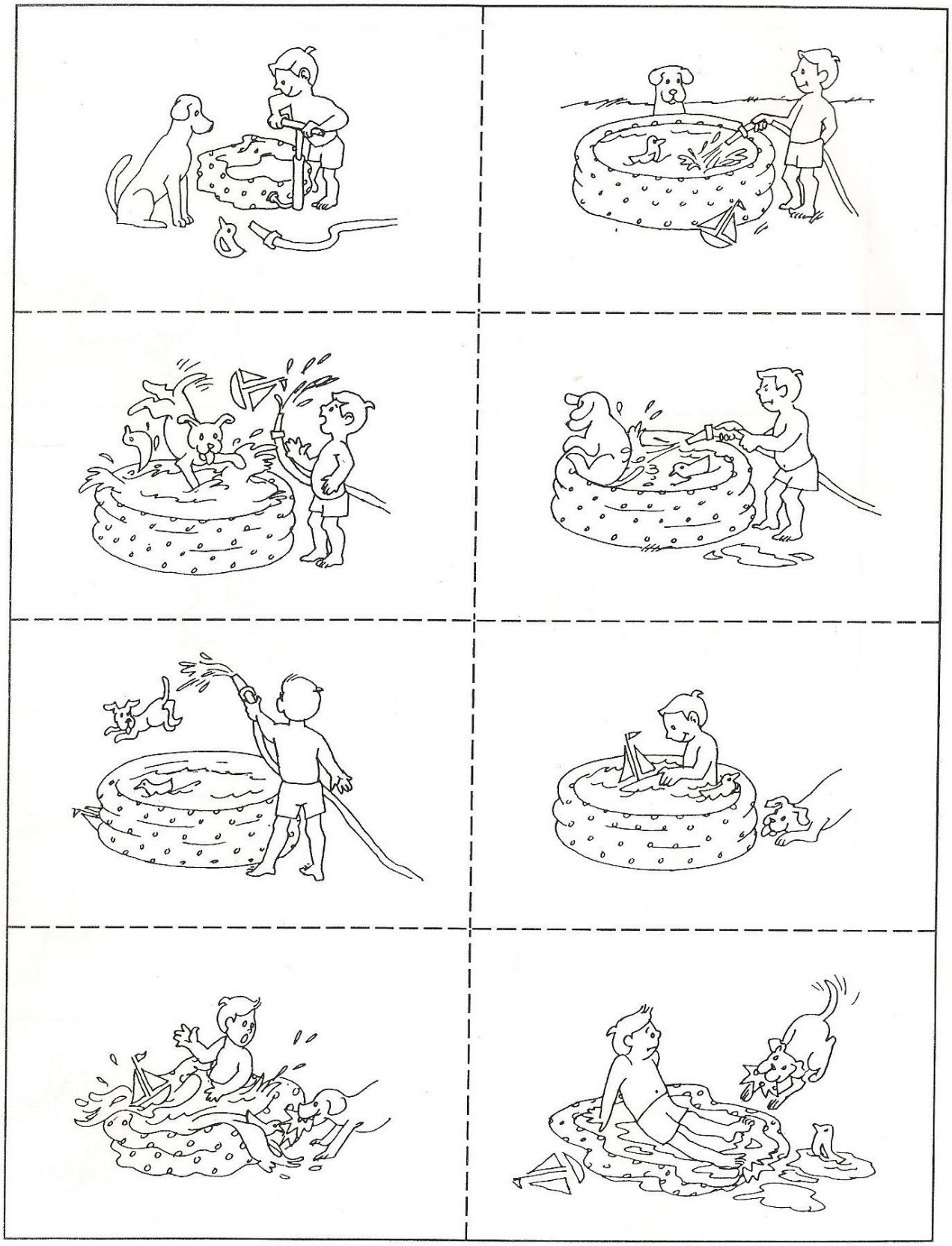
/20

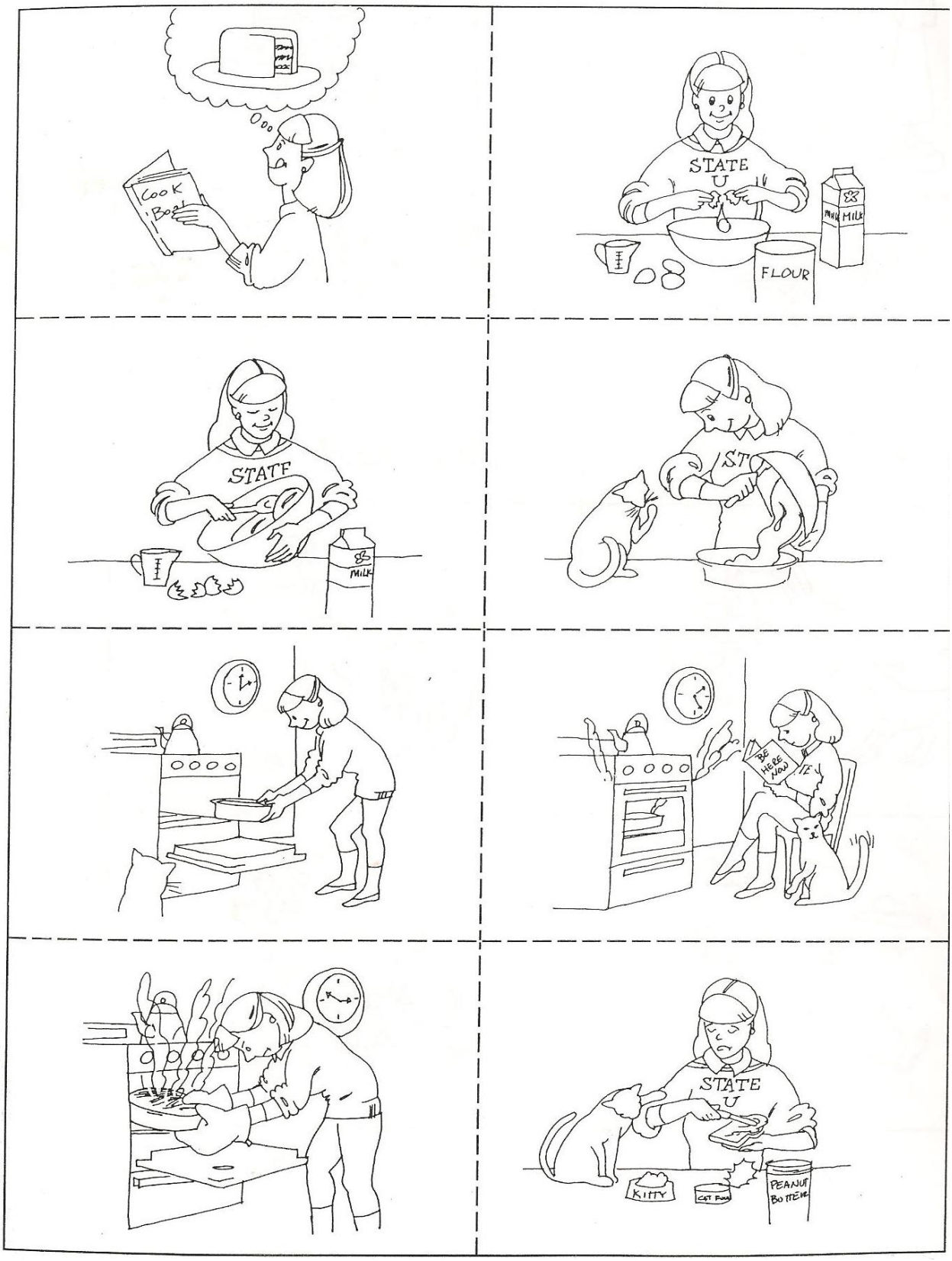
Arranging Picture Stories

The assessor will hand out the picture stories to the learner one at a time. The pictures of each picture story will be in the form of flashcards. The assessor will explain to the learner to arrange the picture in the correct order.

/20






Ooo
COOK BOOK
STATE U
MILK
FLOUR
STATE
MILK
ST
BE HERE NOW
STATE U
KITTY
CAT FOOD
PEANUT BUTTER

Expression and Communication

The assessor will hand out the pictures to the learner one at a time. The learner will be given time to look at the picture. The learner will be asked to sign what is happening in the picture. The learner will be awarded marks if the WHO, WHAT, WHERE, HOW questions are answered in what he / she is signing.

/20


shutterstock

Observation and Comprehension

A signed story will be played to the learner. 10 questions will be asked through signing to the learner based on the story. The learner will respond through signing. The assessor will transcribe the learner's answer immediately, to be marked later. The questions are written in capital letters as an indication that the assessor should sign the question to the learner as indicated. It is important that the learner's answer at least contains the underlined content. See answers.

Flashcard pictures based on the story will be handed out to the learner. The story will be played a second time. The learner will be required to place the events in the pictures in the correct order as the story is signed.

/20

Questions

1. BABY SISTERS HAVE HOW MANY

3 sisters

2. STONES PICK UP HOW MANY

Picked 20 stones up

3. STONES COLOUR WHAT

The colour of the stones was white

4. SISTER PUT BABY WHERE

The sister put the baby on a rug under the tree

5. SISTERS PLAY WHERE

The sister played under the tree close to the baby

6. BABY WENT WHERE

The baby crawled to the house

7. PAINT BOX COLOUR WHAT

The colour of the paint box was red

8. SISTERS BABY SEARCH WHERE

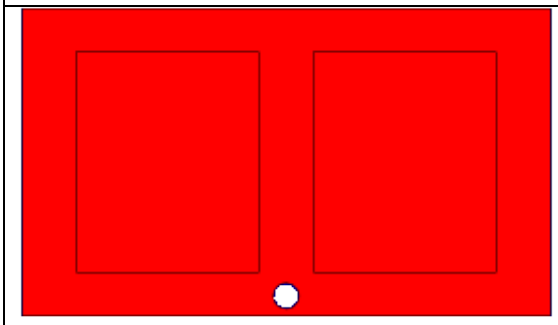
The sisters searched for the baby behind the house, behind the tree and in mother's bedroom (learner can say any of the places)

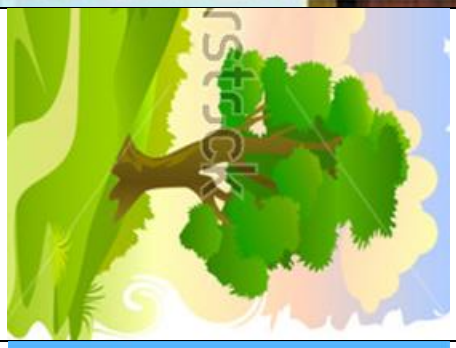
9. RED PAINT HAPPENED WHAT

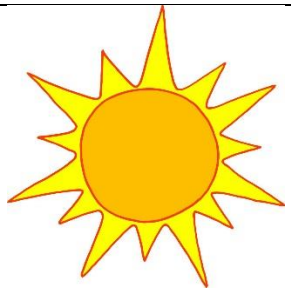
The red paint was broken in half

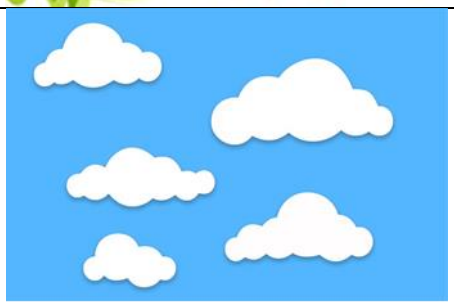
10. BABY FIND FINISH SISTERS DID WHAT

The sisters continue to play a new game after they found the baby









ADDENDUM M: NSL ASSESSMENT INSTRUMENT FOR GRADE 3

Namibian Sign Language Test

Name and surname: _____

Grade: 3

Test date: _____

Learner's gender: _____

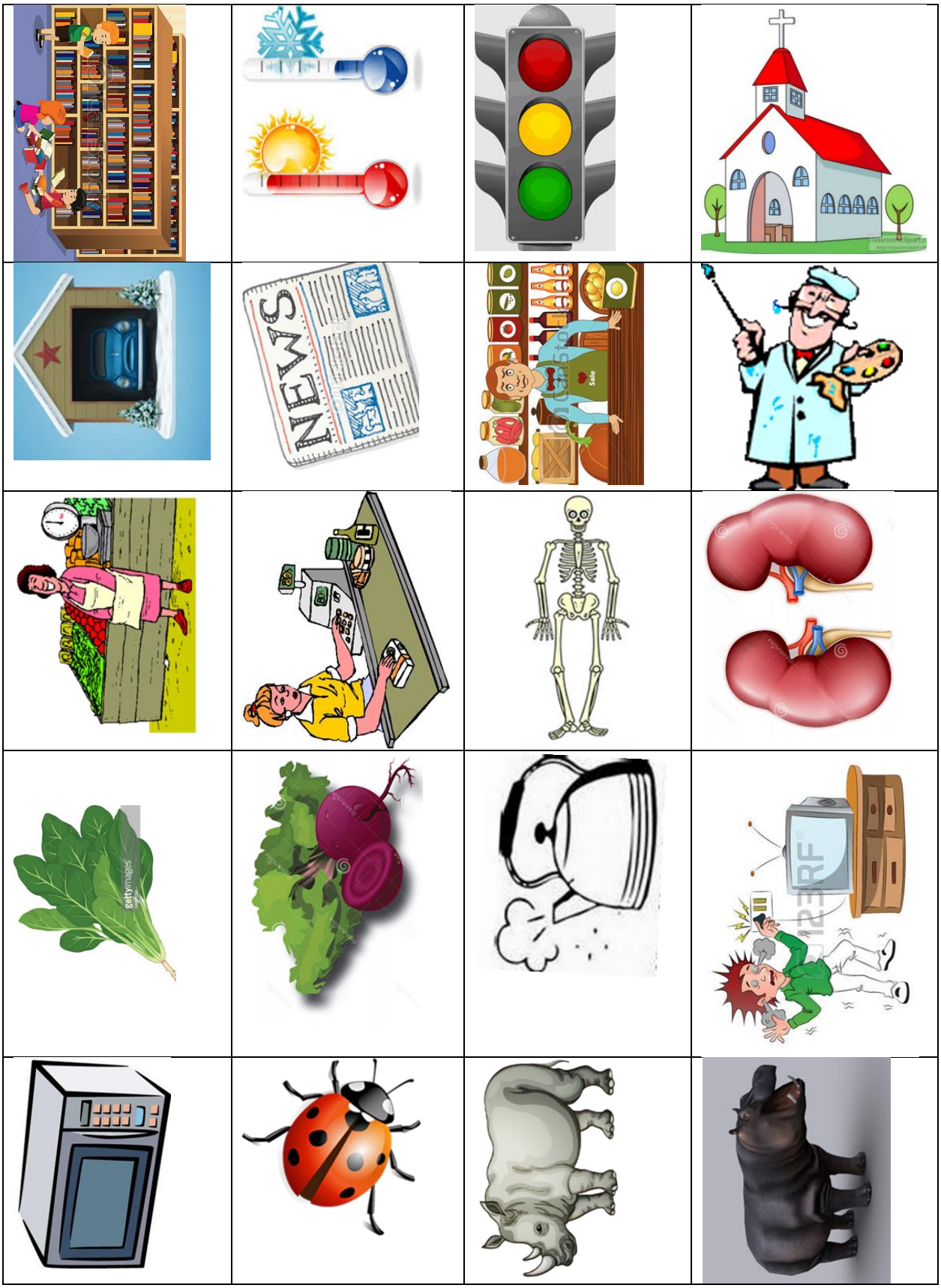
CLaSH attendance: _____

Picture Signing	20	
Sign Identification	20	
Arranging Picture Stories.	20	
Expression and Communication	20	
Observation Comprehension	20	
Total	100	

Picture Signing

The pictures below will be on flashcards. The learner should be able to sign what is in the picture within 3 counts. If the learner is not able to sign what is in the picture within 3 counts, the assessor should move on to the next picture.

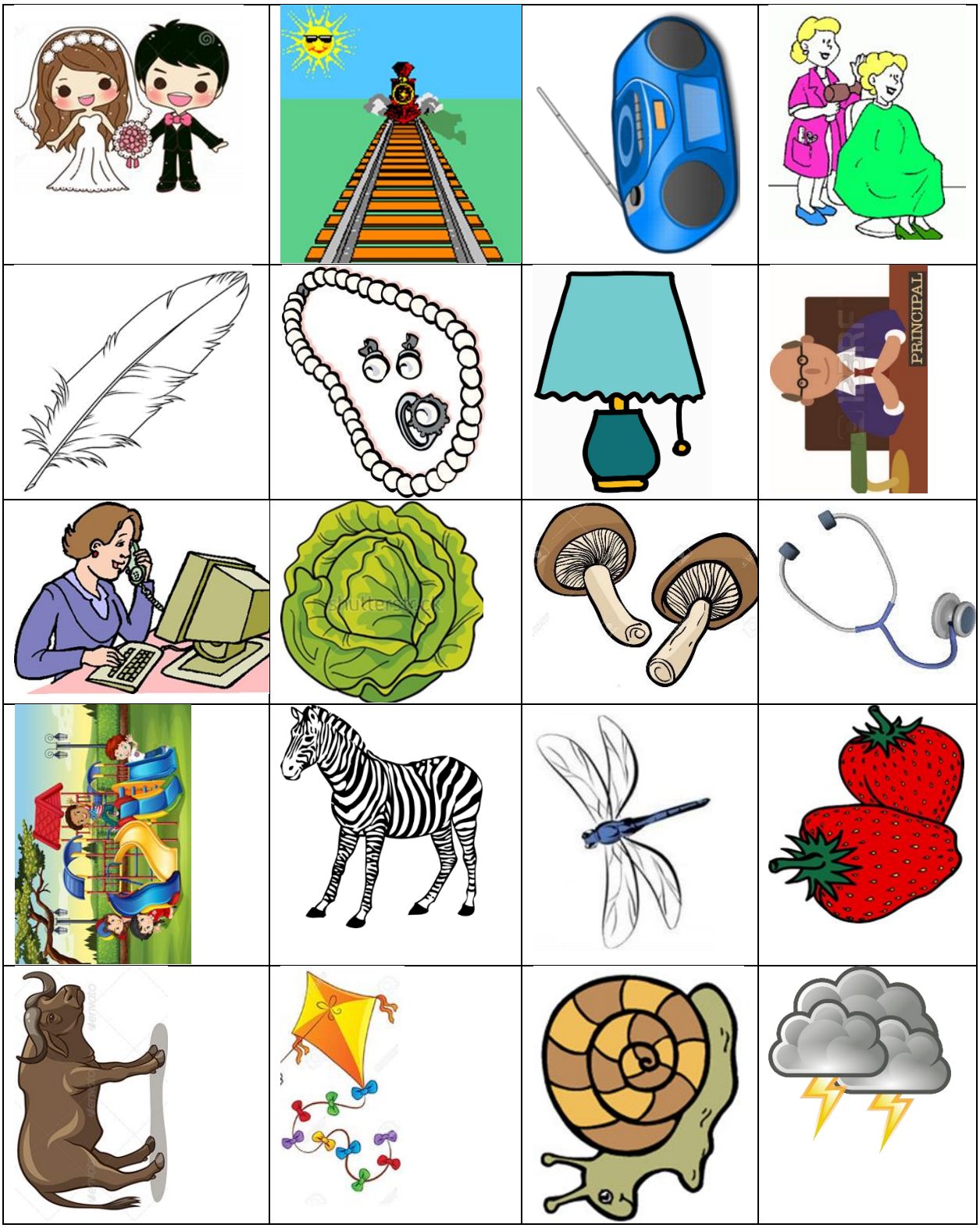
/20


NEWS

Sign Identification

The pictures below will be on flashcards. All the flashcards will be randomly in front of the learner. The assessor will give a sign for one of the pictures in front of the learner. The learner should point to the correct picture that the assessor signed.

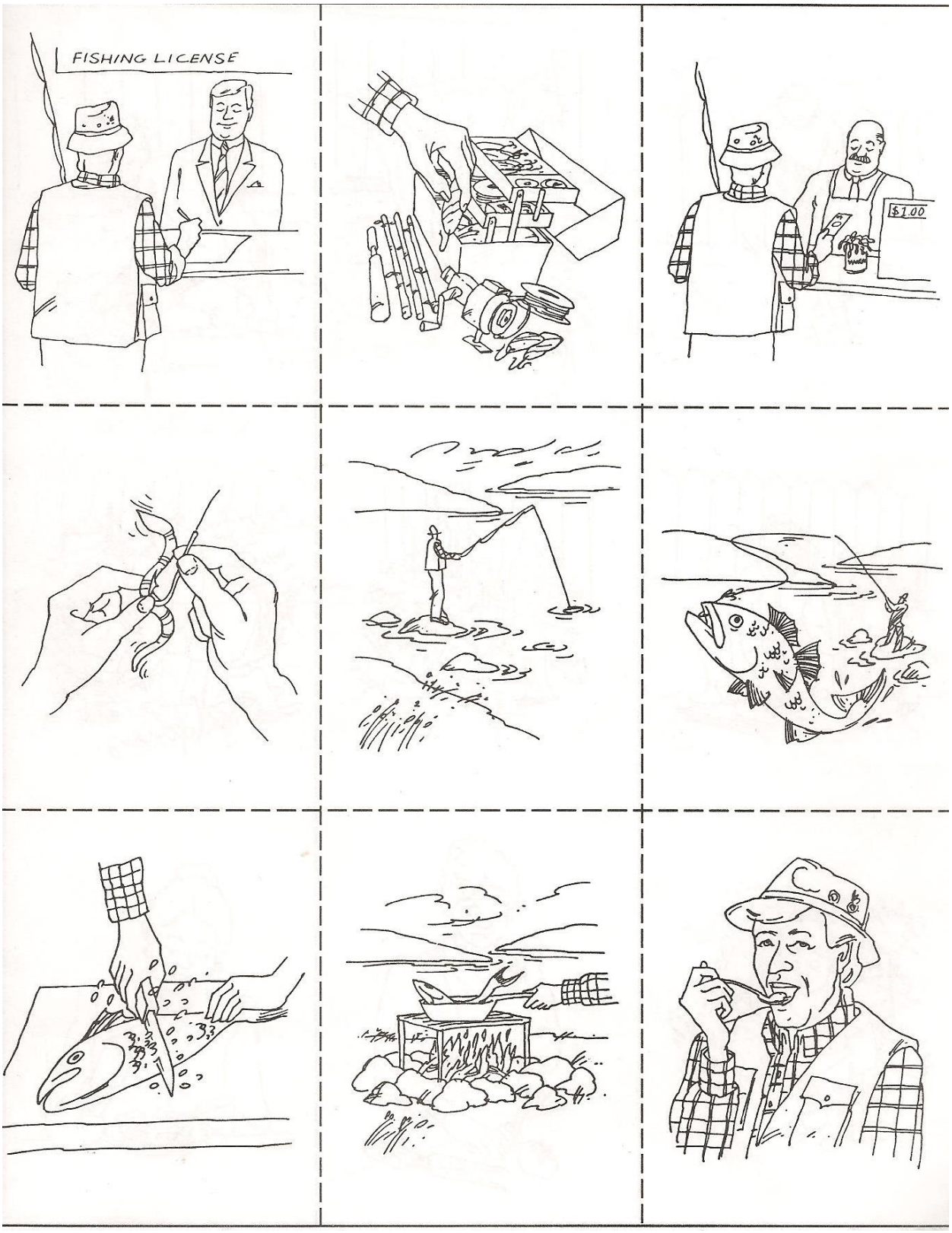
/20


PRINCIPAL

Arranging Picture Stories

The assessor will hand out the picture stories to the learner one at a time. The picture stories will be given in the form of flash cards to the learner. The learner should arrange the flashcards according to the correct order.

/20


FISHING LICENSE
$100

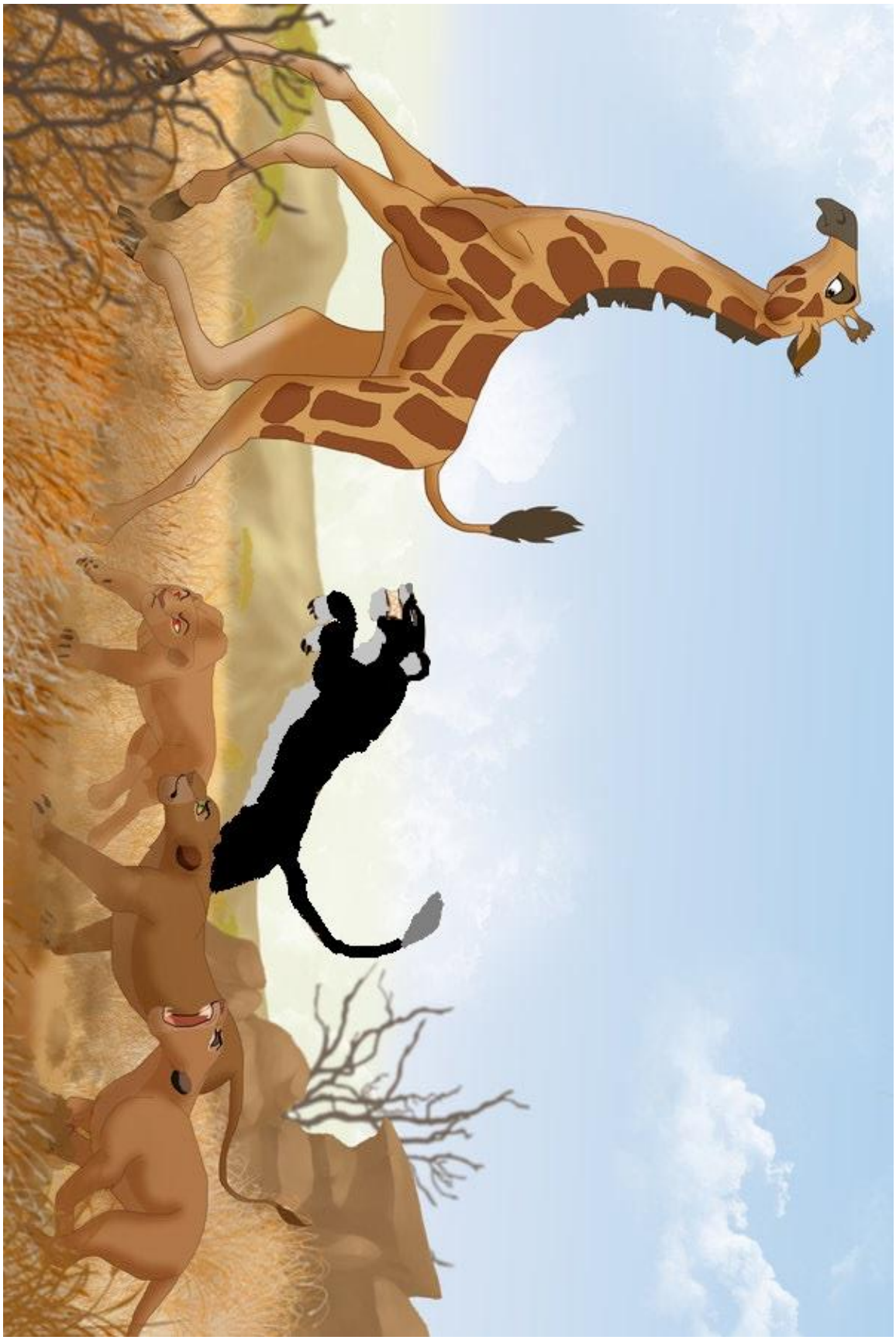

FERTILIZER

Expression and Communication

The assessor will hand out the pictures to the learner one at a time. The learner will be given time to look at the picture. The learner will be asked to sign what is happening in the picture. The learner will be awarded marks for each picture if the he/she uses correct:

- location /placement of people and objects
- classifiers
- facial expression
- verbs movement
- storyline - beginning, middle, end

/20



Observation and Comprehension

A signed story will be played to the learner. 10 questions will be asked through signing to the learner based on the story. The learner will respond through signing. The assessor will transcribe the learner's answer immediately, to be marked later. The questions are written in capital letters as an indication that the assessor should sign the question to the learner as indicated. It is important that the learner's answer at least contains the underlined content. See answers.

Flashcard pictures based on the story will be handed out to the learner. The story will be played a second time. The learner will be required to place the events in the pictures in the correct order as the story is signed.

/20

Questions

1. ANIMALS 4 WHO
   hen, pig, cow, dog

2. PLANT WHEAT WHO
   hen

3. OTHER ANIMALS HELP NOTHING WHY
   they were lazy / they did not want to help

4. AFTER PLANTING WHEAT JOB WHAT
   washing / cleaning wheat

5. BAKE BREAD WHO
   hen

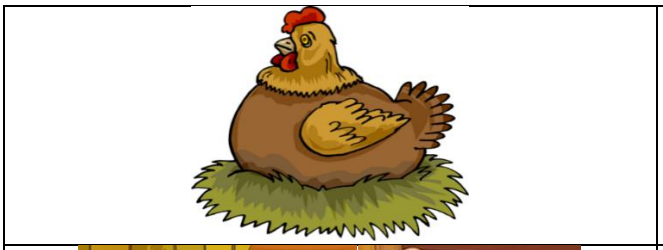
6. HELP BAKE BREAD WHO
   nobody

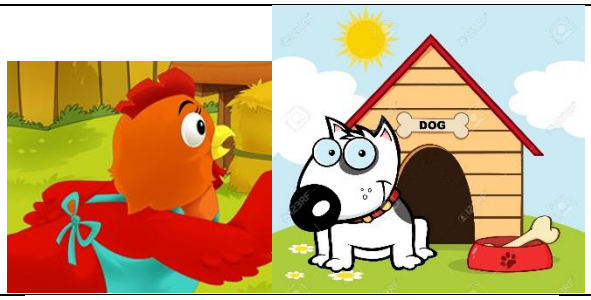
7. BREAD SMELL HOW
   delicious

8. WANT EAT BREAD WHO
   everybody

9. EAT BREAD WHO
   hen

10. SHARE BREAD NOTHING WHY
    others did not help with anything




DOG

ADDENDUM N: WRITTEN ENGLISH ASSESSMENT INSTRUMENT FOR GRADE 1

English Test

Name and surname: _____

Grade: 1

Test date: _____

Learner's gender: _____

CLaSH attendance: _____

Word Reading	30	
Word Identification	20	
Fingerspelling	15	
Syntax Development	15	
Reading Comprehension	20	
Total	100	

Word Reading

The words below will be on flashcards. The learner should be able to read the word within 3 counts. If the learner is not able to read the word within 3 counts, the assessor should move on to the next word.

Note. The learner is allowed to read the word silently and sign it back to the assessor. If the correct sign is given for the word the assessor will know that correct reading of the word was done. Should the learner prefer to read aloud using his/her voice, it will also be accepted. Should the learner prefer to use voice, but voice is inaudible to the assessor, the assessor can ask the learner to sign the word back to him/her.

/30

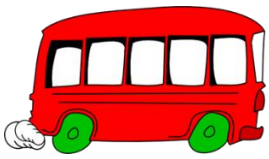
Please note: Words in the test was selected based on the topics in the Pre-Grade and Grade 1 syllabus and integrated plans as well as the grade one sight words for second language as stated in the grade 1 syllabus

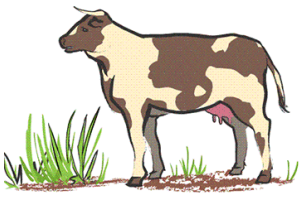
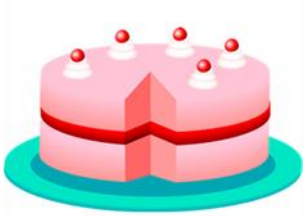
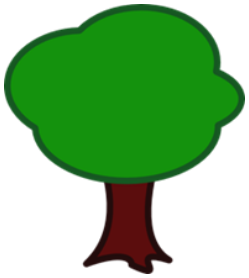
I	you	in	up
look	down	one	my
blue	red	car	run
cold	girl	where	blood
help	yellow	walk	two
play	baby	three	school
mother	friend	dress	door
jump	soap		

Word Identification

The learner will receive a handout of the activity. The assessor will explain to the learner to draw a circle around the word that fits the picture.

/20

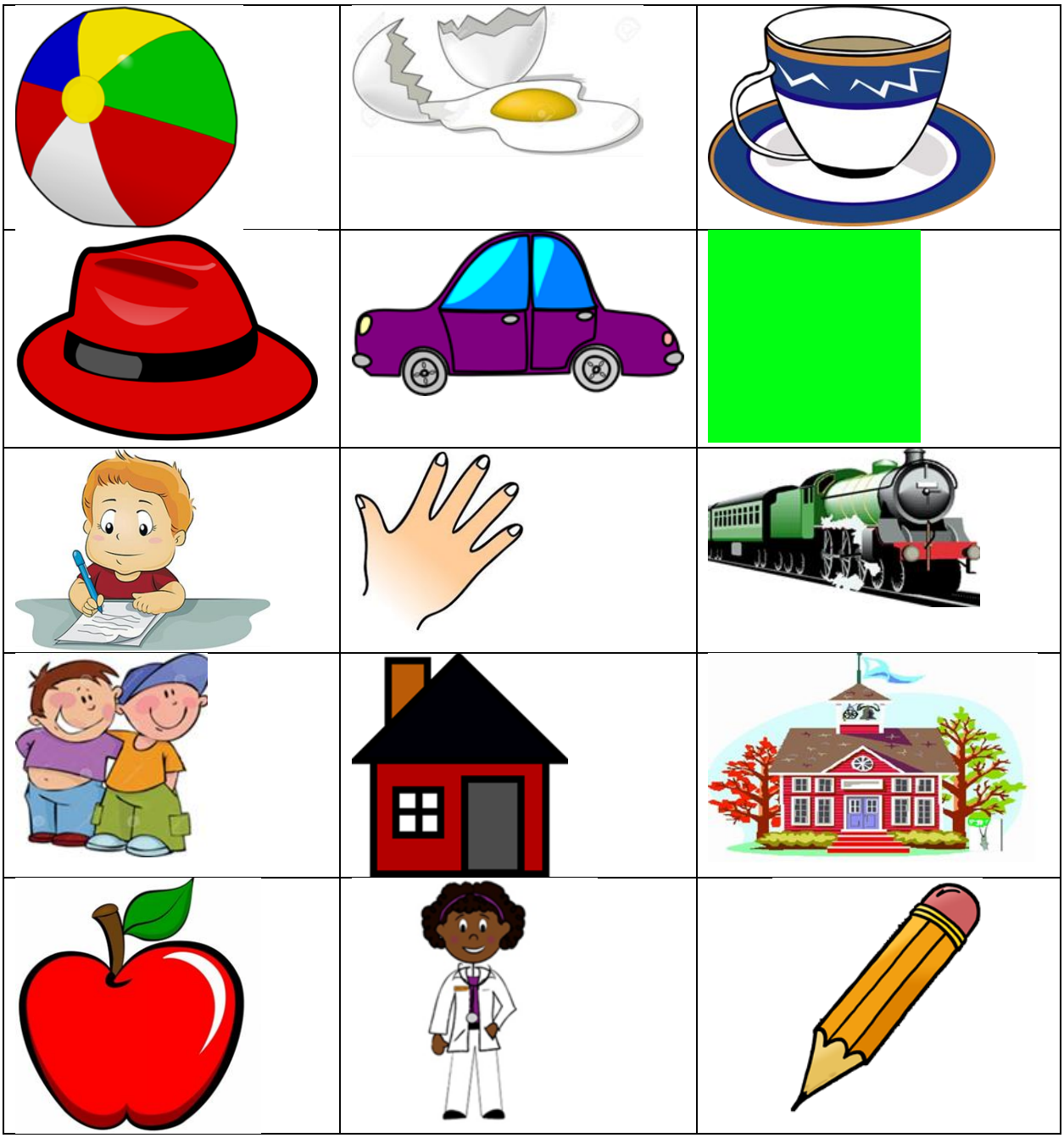
hut sun  gun fun	red bed  sad lad
show shoe  sick side	win find  word wind
chair chin  chips choose	bun run  bus blue
boy big  dig bite	call doll  ball mall
sun son  man nun	grow gloves  goal dove

wet set  red way	root good  food mood
wheel wash  warm where	call cow  cup raw
cat rat  car cap	room soon  moon groom
sat cat  cap mat	sun son  gun run
make bake  rake cake	tall three  tree two

Fingerspelling

The pictures below will be in flashcards. The assessor will show the pictures to the learner and sign the item in the picture to the learner. The learner will be asked to fingerspell the word for the item back to the assessor.

/15



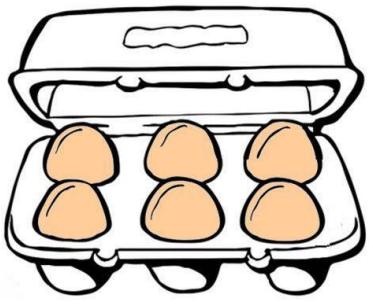
ball, egg, cup, hat, car, green, write, hand, train, friends, house, school, apple, doctor, pencil

Syntax Development

The learner will receive a handout of the activity. The assessor will explain to the learner to look at the pictures and to circle the correct words in the sentences.

/20

She sits	under in out	a	box. chair. table.



The eggs are	under in out	the	box. chair. table.

The girl is	on in under	the	box. chair. table.

The	cat dog pig	is	outside in under	his house.

The	cats pigs birds	sit	out in under	the nest.

The boy and girl	is are am		happy. sad. afraid.	

I	is are am	at	school. home. shop.	

The girls	is are am	good	brothers. parents. friends.	

The boy	is are am	a good	ball doll card	player.

				
I	is are am	reading a	book. doll. car.	

Reading Comprehension

The learner will receive a handout of the first activity. The assessor will explain to the learner to make a **√** next to the correct statement and a X next to the wrong statement.

The learner will receive a handout of the second activity. The assessor will explain to the learner to match the pictures with the correct sentence.

/20

	√ X
The cock is on the roof.	
The man is behind the barn.	
The trees are next to the house.	
The horse is in the barn.	
The cow is outside the barn.	
There is a bicycle on the farm.	
The pig is on the tractor.	
The hen sits on her nest.	
There are five animals on the farm.	
The cows eat grass.	

The man drives a car.	
The baby cries.	
The girl plays with her doll.	
The cat drinks milk.	
The boy plays soccer.	
The hen sits in her nest.	
The birds are in the tree.	
Mother cooks food.	
The children visit grandmother and grandfather.	
Teacher reads a story.	

ADDENDUM O: WRITTEN ENGLISH ASSESSMENT INSTRUMENT FOR GRADE 2

English Test

Name and surname: _____

Grade: 2

Test date: _____

Learner's gender: _____

CLaSH attendance: _____

Word Reading	30	
Word Identification	20	
Fingerspelling	15	
Syntax Development	15	
Reading Comprehension	20	
Total	100	

Word Reading

The words below will be on flashcards. The learner should be able to read the word within 3 counts. If the learner is not able to read the word within 3 counts, the assessor should move on to the next word.

/30

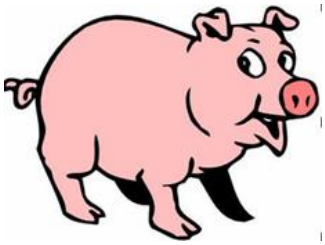
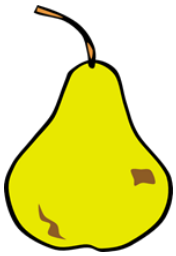
Note. The learner is allowed to read the word silently and sign it back to the assessor. If the correct sign is given for the word the assessor will know that correct reading of the word was done. Should the learner prefer to read aloud using his/her voice, it will also be accepted. Should the learner prefer to use voice, but voice is inaudible to the assessor, the assessor can ask the learner to sign the word back to him/her.

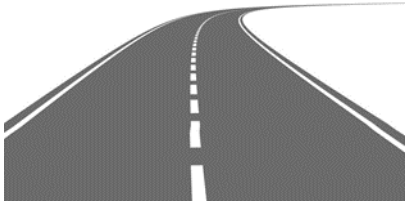
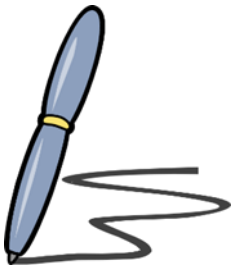
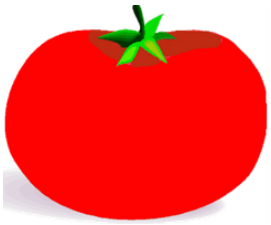
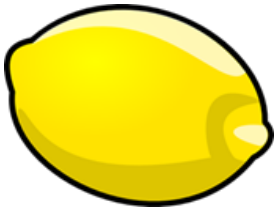
no	old	fly	on
out	who	yes	new
our	good	time	like
what	sick	clean	wash
news	swim	under	black
water	sweet	letter	carrot
hard	please	money	vegetables
family			airplane

Word Identification

The learner will receive a handout of the activity. The assessor will explain to the learner to draw a circle around the word that fits the picture.

/20

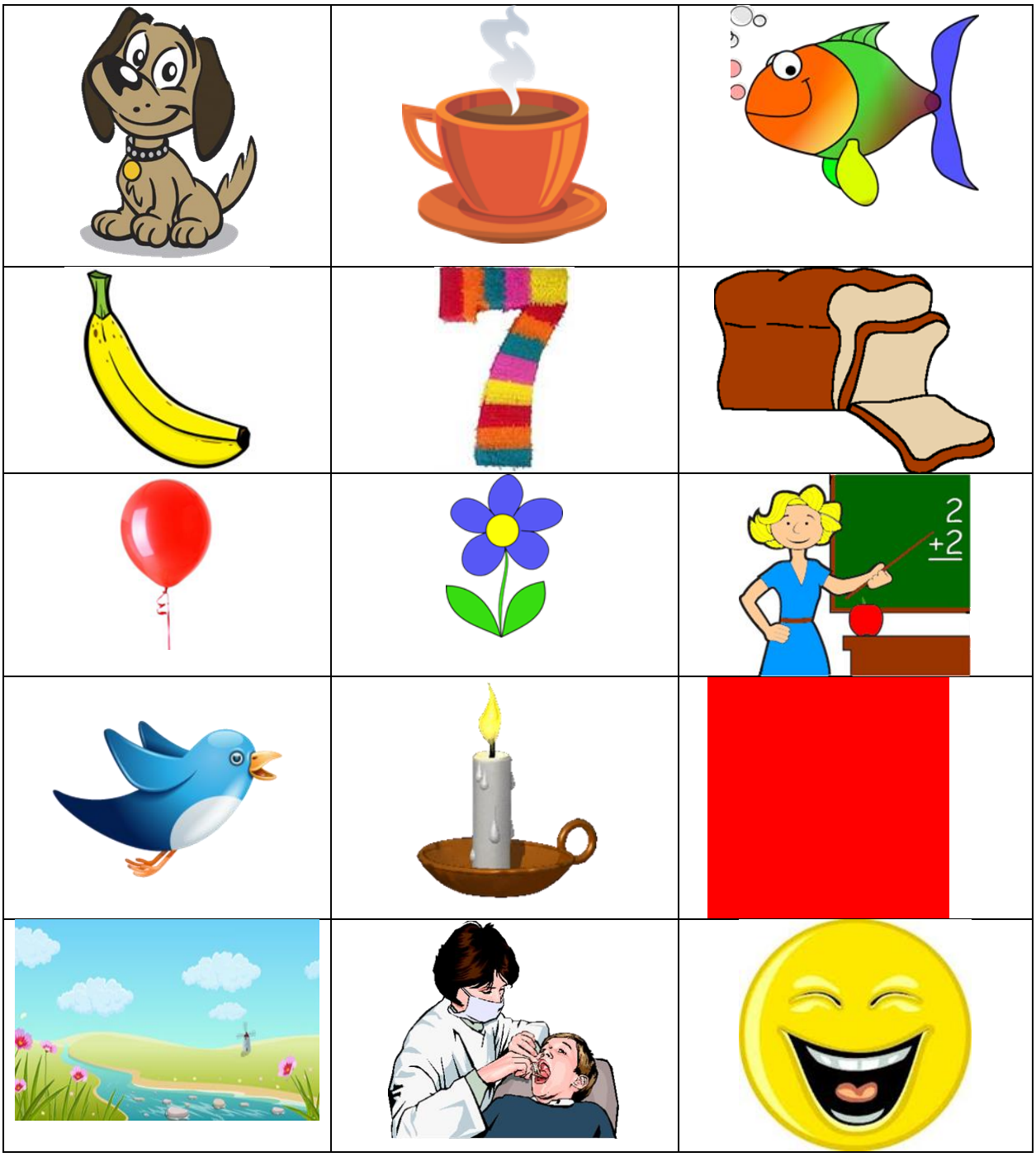
ride hire  more fire	rest mess  nest best
peg big  pig dig	high horse  happy more
shoot good  boots roots	hair fair  have rare
pear pair  pack pet	leaf life  left search
give five  thief fun	fig grape  apple orange

has hen  red pen	root road  broad rude
rain ran  train raw	read peep  save sleep
skirt dirt  sky sleep	fan hen  man pen
big bag  blue bad	tomato potato  tattoo table
lemon learn  long leg	dot rat  pot sit

Fingerspelling

The pictures below will be in flashcards. The assessor will show the pictures to the learner and sign the item in the picture to the learner. The learner will be asked to fingerspell the word for the item back to the assessor.

/15



dog, tea, fish, banana, seven, bread, balloon, flower, teacher, bird, candle, red, river, dentist, laugh

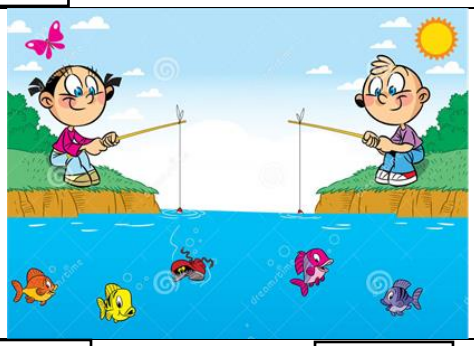
Syntax Development

The learner will receive a handout of the activity. The assessor will explain to the learner to look at the pictures and to circle the correct words in the sentences.

/20

He	is are am	on in out	a	box. room. class.	

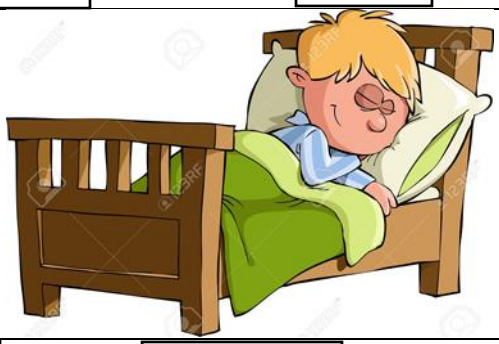
The	children animals cats	is are am	playing.	



The fish	is are am	on in out	the	pot. water. house.	

I	is are am	in my	bedroom. toilet. kitchen.

The woman	sit stand sits	on the	chair. table. bed.



I	sleep play sit	under on out	my	chair. bed. table.

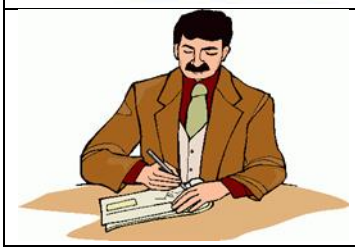
Reading Comprehension

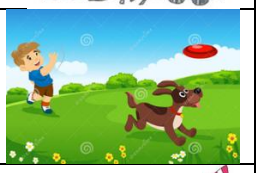
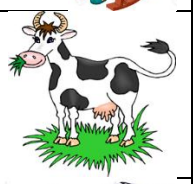
The learner will receive a handout of the first activity. The assessor will explain to the learner to look at the picture and to select from the words and write in who is doing what.

/10

The learner will receive a handout of the second activity. The assessor will explain to the learner to match the pictures with the correct sentence.

/10

The girls The cat reads writes The woman sleeps The man The boy cooks play		
	Who	what
		
		
		
		
		

The cow eats grass.	
The old lady reads a book.	
The cat drinks her milk.	
The children play at the playground.	
The man and the dog sit by the fire.	
The mother combs the child's hair.	
The boy and his dog play.	
The old man sits on his chair.	
Today is her birthday.	
The boy eats an apple.	

ADDENDUM P: WRITTEN ENGLISH ASSESSMENT INSTRUMENT FOR GRADE 3

English Test

Name and surname: _____

Grade: 3

Test date: _____

Learner's gender: _____

CLaSH attendance: _____

Word Reading	30	
Word Identification	20	
Fingerspelling	15	
Syntax Development	15	
Reading Comprehension	20	
Total	100	

Word Reading

The words below will be on flashcards. The learner should be able to read the word within 3 counts. If the learner is not able to read the word within 3 counts, the assessor should move on to the next word. /30

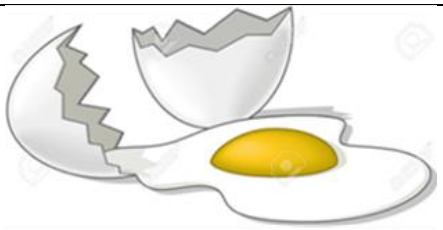
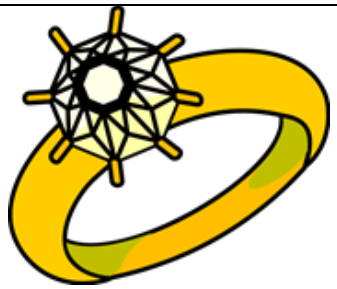
Note. The learner is allowed to read the word silently and sign it back to the assessor. If the correct sign is given for the word the assessor will know that correct reading of the word was done. Should the learner prefer to read aloud using his/her voice, it will also be accepted. Should the learner prefer to use voice, but voice is inaudible to the assessor, the assessor can ask the learner to sign the word back to him/her.

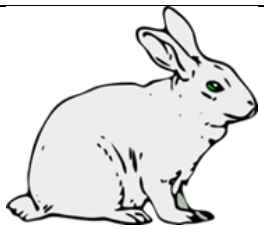
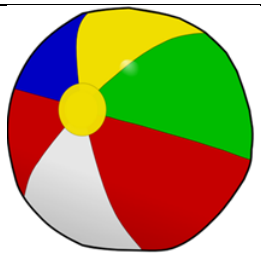
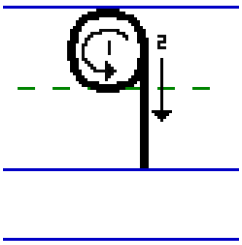
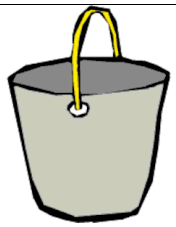
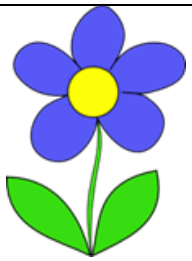
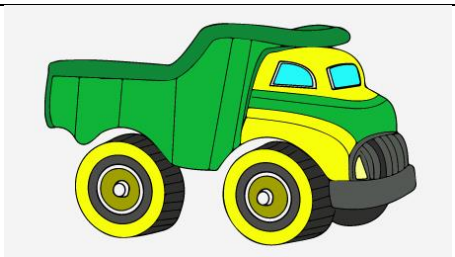
when	ask	how	happy
mix	walk	man	computer
sleep	cold	write	country
proud	movie	bucket	angry
paint	make	learn	whistle
teach	police	king	culture
stone	think	house	helicopter
green			understand

Word Identification

The learner will receive a handout of the activity. The assessor will explain to the learner to draw a circle around the word that fits the picture.

/20

 sun gun run	 bag leg egg
 bin sin son	 sing bring ring
 stress less dress	 jam ram mop
 baby rugby ruby	 road boat broad
 rope tap top	 boat soup soap

 rabbit robot nugget	 rug flash flag
 meet read road	 doll mall ball
 nine dine shine	 broom soon room
 rabbit bucket basket	 crowd crawl crown
 flour flower flour	 sorry lonely lorry

Fingerspelling

The pictures below will be in flashcards. The assessor will show the pictures to the learner and sign the item in the picture to the learner. The learner will be asked to fingerspell the word for the item back to the assessor.

/15

gloves, scarf, jeans, salad, worm, rainbow, spoon, plate, elephant, factory, cupboard, thief, police, cucumber, rain

Syntax Development

The learner will receive a handout of the activity. The assessor will explain to the learner to look at the pictures and to use the phrases from the box to build sentences.

/15

The apples are	The boy	a book	under the table	a ball
on a chair	The man	the dog sleeps	in the bag	The woman
The girl	drinks coffee	Sits	kicks	reads
				
				
				
				
				
				

Reading Comprehension

The assessor hands out the reading cards to the learner one at a time. The learner must read the reading card. The assessor will ask the learner the questions below. The learner can use the reading card to answer the questions.

/20

This is Kahdila. His surname is Uulenga. Kahdila is 8 years old. He lives at home with his father, mother, sister and his baby brother. His sister's name is Martha and his baby brother's name is Thomas.

1. What is Kahdila's surname?
2. How old is Kahdila?
3. Where does Kahdila live?
4. What is Kahdila's sister's name?
5. What is Kahdila's brother's name?

When Kahdila was four years old, he and Martha got very sick with measles. They both lost their hearing because of the measles. Kahdila and Martha are deaf and they go to the school for deaf children. They use Namibian Sign Language to communicate with each other.

1. How old was Kahdila when he got sick?
2. Who was also sick?
3. What illness did they have?
4. Where do the go to school?
5. How do they communicate?

The rest of the family are hearing. Father and mother learned Namibian Sign Language from special classes that were given at the school. Now the whole family can communicate with each other. Even little Thomas are learning to sign. Thomas stays at home. He is too young for school.

1. Where did father and mother learn Namibian Sign Language?
2. Are father and mother deaf or hearing?
3. Can the family communicate with each other?
4. Where does Thomas stay when Kahdila and Martha go to school?
5. Why is Thomas not going to school?

Kahdila's teacher's name is Mrs Cloete. He really likes her class. Mr. Henok is the school principal. His friend's name is Peter. They both like soccer. Peter stays in the hostel. He dislikes all the rules in the hostel. Both Kahdila and Peter like school.

1. What is the school principal's name?
2. What is Kahdila's teacher's name?
3. What is Kahdila's friend's name?
4. Where does Kahdila's friend stay/
5. What does both Kahdila and his friend like?