JYU DISSERTATIONS 317

Taimi-Ndapandula Nghikembua

Learning to Read and Spell in Oshikwanyama Language

Precursors, Dynamics and Teacher Knowledge of Early Literacy Instruction

UNIVERSITY OF JYVÄSKYLÄ
FACULTY OF EDUCATION AND PSYCHOLOGY

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Esitetään Jyväskylän yliopiston kasvatustieteiden ja psykologian tiedekunnan suostumuksella julkisesti tarkastettavaksi marraskuun 13. päivänä 2020 kello 12.

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Dedication

This thesis is dedicated to my parents Andreas and Ellen Nghikembua for a good educational foundation they have provided for us and for the value they have placed on education, overall.

ABSTRACT

Nghikembua, Taimi - Ndapandula
Learning to read and spell in Oshikwanyama language: Precursors, dynamics and teacher knowledge of early literacy instruction
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In the present thesis, children's reading and spelling skills development was examined from the beginning of Grade 1 to the end of Grade 2 in Oshikwanyama language in Namibia. Teachers' knowledge of early literacy instruction in Oshikwanyama language was also examined. In Part I, the two-year longitudinal study followed 150 children from Grade 1 to 2, and their early reading and spelling skills were assessed at three time points. In Part II, 153 Junior Primary school teachers completed a questionnaire concerning their knowledge of early literacy instruction. The results showed, first, that, phonemic awareness, letter knowledge and rapid automatised naming (RAN) at the beginning of Grade 1 predicted reading and spelling skills at the end of the first grade, with letter knowledge effect being indirect through phonemic awareness and RAN. Second, decoding and spelling skills development showed a strong, reciprocal relationship. Results further revealed that decoding skill developed faster than spelling skill, as children's decoding skills could be already determined at the end of Grade 1, while spelling skills development was unpredictable. In Part II, the teachers' data revealed a knowledge gap in phonological knowledge at phoneme and morphological levels, but they had quite good knowledge at syllable level in Oshikwanyama language. Regarding literacy concepts as well as teaching methods and strategies in Oshikwanyama language, teachers' knowledge level was generally low. The thesis found significant differences among pre-service, in-service and experienced teachers, with regard to training, qualifications and knowledge of Oshikwanyama language literacy instruction. The study further found relationships between training, qualifications, teaching experience and different knowledge aspects of teachers. These results indicate that recent teacher training on teaching literacy in Oshikwanyama language is showing some positive outcomes as far as early literacy instruction is concerned. Overall, the study offers implications for literacy instruction to teach reading and spelling hand in hand as well as the need for explicit instruction of phonological awareness for both learners and teachers. The study further suggests a strong need for capacity building of experienced and in-service teachers regarding Oshikwanyama language literacy instruction in Namibia.

Keywords: reading, spelling, Oshikwanyama language, teacher knowledge, early literacy instruction

TIIVISTELMÄ (ABSTRACT IN FINNISH)

Nghikembua, Taimi-Ndapandula
Luku- ja kirjoitustaidon oppiminen oshikwanyaman kielellä: opettajien valmiudet, dynamiikat ja tiedot luku-ja kirjoitustaidon opetuksesta
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Tässä tutkimuksessa tarkasteltiin namibialaisten lasten oshikwanyama kielen luku- ja kirjoitustaidon kehitystä ensimmäisen kouluvuoden alusta toisen kouluvuoden loppuun. Lisäksi tutkittiin opettajien tietoja varhaisesta lukutaidon opetuksesta oshikwanyaman kielellä. Tutkimuksen osassa I seurattiin 150 lapsen kehitystä kahden vuoden ajan, ensimmäiseltä toiselle luokalle. Lasten lukemisen ja kirjoittamisen taitoja arvioitiin kolmena ajankohtana. Tutkimuksen osassa II kaikkiaan 153:n Junior primary- vaiheen (esiopetus ja luokat 1-3) opettajan tietoja varhaisesta lukutaidon opetuksesta selvitettiin kyselylomakkeen avulla. Tulokset osoittivat ensinnäkin, että ensimmäisen kouluvuoden alun äännetietoisuus, kirjaintuntemus ja nimeämisnopeus (RAN) ennustivat lukemisen ja oikeinkirjoituksen taitoja ensimmäisen kouluvuoden lopulla. Kirjaintuntemuksen yhteys taitoihin oli epäsuora ja välittyi äännetietoisuuden ja RANin kautta. Toiseksi, lukemisen ja oikeinkirjoituksen taidot olivat kehityksellisesti vahvasti yhteydessä toisiinsa. Tulokset osoittivat myös, että lukutaito kehittyi nopeammin kuin oikeinkirjoitustaito. Tutkimuksen osassa II, tulokset osoittivat opettajien tiedoissa puutteita erityisesti äännetietoisuuden ja merkitysyksiköiden eli morfeemien hallinnassa. Oshikwanyaman kielen tavuja koskevan tiedon taso oli puolestaan suhteellisen hyvä. Lukutaitoon liittyvien käsitteiden hallinta sekä opetusmenetelmiä ja –periaatteita koskeva tieto oli yleisesti heikolla tasolla. Tutkimuksessa havaittiin merkitseviä eroja opettajaopiskelijoiden, työssä olevien opettajien ja kokeneiden opettajien välillä koulutuksessa, ammatillisissa kelpoisuuksissa ja oshikwanyaman kielellä lukemaan opettamista koskevissa tiedoissa. Tulokset osoittivat myös yhteyksiä koulutuksen, ammatillisten kelpoisuuksien, opetuskokemuksen ja opetuksellisen tiedon hallinnan välillä. Tulokset viittaavat siihen, että viimeaikaisella opettajankoulutuksen kehityksellä on myönteisiä vaikutuksia varhaiseen lukutaidon opetukseen oshikwanyaman kielellä. Kaiken kaikkiaan tulokset viittaavat siihen, että luku- ja kirjoitustaitoa voi olla perusteltua opettaa samanaikaisesti, ja että äännetietoisuuden hallintaa on syytä opettaa oppijoiden lisäksi opettajille. Tutkimus osoittaa vahvasti tarvetta kehittää myös kokeneiden ja ammatissa toimivien opettajien valmiuksia oshikwanyaman kieliseen lukutaidon opetukseen Namibiassa.

Avainsanat: lukeminen, oikeinkirjoitus, oshikwanyaman kieli, opettajien tiedot, lukemaan ja kirjoittamaan opettaminen

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Taimi- Ndapandula Nghikembua

FIGURES

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1 INTRODUCTION

1.1 Literacy acquisition in the African context

The development of initial reading skills in children has been extensively studied, globally. Although this is the case, these studies remain minimal on the African continent. This is true, for example, for Namibia. There has been some growing knowledge and attempts at assessing reading ability among children in schools, especially in the early grades, but most of these attempts have been cross-sectional in nature. There has not yet been enough attempt to follow children for longer periods to understand their developmental paths in literacy learning. Language acquisition and learning is, in itself, a complex issue in most African countries. This is due to multilingualism and differences between home languages (which are in most cases mother tongues and in some cases not) and languages used in schools. In most cases, the home language is not the language learnt in school or the language through which learning takes place at school. This characterises the situation of many countries on the African continent, thus making literacy acquisition both at home and school more complex.

A number of studies in Sub-Saharan Africa have revealed that a large percentage of children fail to achieve basic literacy skills in the first three grades of school (Chansa-Kabali, 2014; Piper, Zuilkowski, & Mugenda, 2014; Uwezo, 2013). Results of three studies by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ I, 1996; SACMEQ II, 2000; SACMEQ III, 2007) reported that, in the 15 participating African countries, most learners in Grade 6 were still reading below the SACMEQ mean, in English language. There are, notably, countries that have been performing consistently above average, such as Kenya, Seychelles, Mauritius, Botswana, Tanzania, and Swaziland, among others (Hungi et al., 2010). A positive trend observed was also that there has been improvement in learners' reading achievements in the SACMEQ IV (2013) across all countries as most countries performed above the SACMEQ mean.

This is especially noteworthy for countries such as Namibia and South Africa who have improved gradually. The report revealed that Namibia had the third best improvement rates in reading and mathematics among participating countries. It further specifies this gradual improvement of Namibian Grade 6 learners reading skills from basic reading skill levels (1-5) to advanced reading skills from SACMEQ II (15%) to SACMEQ IV (35%). However, countries such as Zambia and Malawi remained below the SACMEQ mean in the last SACMEQ IV (Shigwedha, Nakashole, Auala, Amakutuwa & Ailonga, 2015). In another study, the Progress in International Reading Study (PIRLS) Literacy study of 2016, South Africa was also placed last, out of 50 countries who participated in PIRLS 2016. In that study, 78% of Grade 4 pupils in South Africa did not reach the lowest international benchmark in reading comprehension. South African indigenous languages also performed significantly lower than English and Afrikaans (Howie et al., 2017).

The Early Grade Reading Assessment [EGRA] studies are another source of reading literature on the African continent (Gove & Wetterberg, 2011). These assessments could, in fact, provide more helpful evidence than the SACMEQ studies as they are done in the early grades of school. EGRA is a one-on-one oral evaluation that assesses competence in essential components of reading namely, phonemic awareness, phonics, familiar word reading, non-word reading, reading fluency and comprehension (National Institute for Educational Development [NIED], 2012). In Egypt, EGRA conducted in 2009 showed low mean scores in reading (United States Agency for International Development [USAID], 2011). Similarly, in the Gambia, low reading levels were also recorded in the EGRA done in 2007 as 82% of the children could not read more than five words correctly in a 60 words text. Other striking results in the Gambian EGRA study are that 50% of third graders could not read a single word correctly in the familiar word task and 76% could not read a single pseudo-word correctly (Sprenger-Charolles, 2008). In her study, Chansa-Kabali (2014) also states that many national reports in Zambia confirm the low literacy levels among Zambian learners. A Tanzanian study by Ngorosho (2011) equally reported low achievement in reading and writing ability in primary schools in one of the rural areas. In her study, she quotes a national survey that indicated that one in five primary school leavers who had completed seven years in school could not read Grade 2 level Kiswahili. Moreover, Kalanje (2011) also documented a fairly high percentage of first graders at risk of reading and writing difficulties in Tanzania. All this evidence points to low literacy levels on the African continent.

In Namibia, the EGRA pilot study was conducted in 2012 on three languages namely, English, Oshindonga, and Khoekhoegowab (Gains & Parkes, 2012). The results showed that children's reading skills in these grades were quite low in Grades 2, 3 and 4, with some variation between regions and hence languages. One of the main findings was that reading fluency (speed) and comprehension were generally low, with half of the learners in Hardap region only able to read up to 10 letters per minute and 75% of the learners in this specific region and Khoekhoegowab language could only read 0–20 words per minute.

Another interesting finding was that, strong performance in phonemic awareness and letter knowledge was not associated with reading fluency or comprehension. This is contrary to previous research evidence that pre-reading skills such as phonemic awareness and letter knowledge predict reading skill. More research is needed to better understand these findings.

Although there seems to be a fairly good amount of recent Namibian studies on the literacy situation in the country, very few have studied literacy skills development in local languages. This is a considerable gap in literacy development research. Basic knowledge of how children acquire local languages or how they develop foundational skills of reading and writing in local languages is unknown and under-researched. As a main concern, there is very little literature on local languages and this leads to lack of knowledge of how to guide the processes of foundational skills learning, development and instruction. Among the few studies conducted in local languages recently, Haifidi (2019) examined the development of reading skills in Oshikwanyama and Oshindonga languages at Junior Primary phase. His study found that some of the factors hindering the development of reading skills in Oshiwambo languages were lack of understanding of phonics, lack of methodology in teaching reading as well as lack of in-service training on reading development in these languages. Shingenge (2017) investigated how Pre-primary teachers in Oshana region in Namibia prepare children for initial reading and found that teachers' knowledge of phonemic knowledge for the purpose of pedagogy was limited. Moreover, Nambundunga's study (2017) explored reading difficulties in Oshikwanyama language in Grade 2 and revealed that children had poor mastery of phonic sounds as teachers used the whole word method more than the phonic method when teaching reading. February's (2018) study also examined children learning to read Afrikaans language as well as teacher competence in literacy instruction in Namibia. She found that teachers lacked basic knowledge regarding Afrikaans language and reading instruction. Findings from all these studies point in the direction of lack of knowledge on literacy learning and teaching in the country. The limited scientific body of research and knowledge in early literacy development and instruction is a limiting factor for both teacher education as well as teaching and learning of literacy skills in early grades. This limited scientific knowledge in local language literacy acquisition manifests itself in the use of misguided literacy pedagogy, confusion in the teaching and learning of Mother tongue and English, unfulfilling learning experience in school, among others. These ultimately lead to poor literacy outcomes at Junior Primary phase in Namibia.

Based on the background above, it was, thus, of great significance to conduct a study of how children learn to read and spell in one of the common local languages in Namibia, Oshikwanyama, to add to the limited scientific body of knowledge in literacy learning in Namibian local languages. The present thesis complements the depth and length of other studies conducted in the interest of Oshikwanyama and Oshindonga languages in Namibia as it examined literacy learning from Grade 1 to Grade 2. In that sense, the thesis can be considered as

pioneering work in the field of Oshikwanyama literacy development research in early school years. It provides some insight into children's developmental pathways in literacy skills during the first two years of school. However, only looking at how children developed the skills was not going to provide a complete picture of the literacy situation in Oshikwanyama language. It was, thus, deemed important to look into other variables that might have a significant effect on children's literacy development. One such variable could be teacher knowledge of literacy instruction, hence a study on teachers' knowledge was also conducted. This was not only done in the interest of what teachers know, but also to determine the gaps in the field of literacy knowledge and the type of support needed for the future. The present study will also be one of the few studies that focused on both reading and spelling skills development in one study, among local languages in Africa. The inclusion of both skills in one study was done to acknowledge the interconnectedness of the two skills as highlighted by literature, as well as to confirm or reject this hypothesis.

1.2 The language policy in Namibia and its challenges

Namibia is a multilingual society with over 30 spoken languages (Namibian languages, n.d.), 22 of these languages being indigenous (Languages of the world, n.d.). These languages comprise three language families namely, the Bantu languages, the Khoesan languages as well as the Indo-European language families. However, only 14 of these 30 languages have standardised orthography and are used in schools. These fourteen languages are Afrikaans, English and German (Indo-European languages); Khoekhoegowab, Jo|'hoansi (Khoesan languages); Oshindonga, Oshikwanyama, Otjiherero, Rukwangali, Thimbukushu, Rumanyo, Silozi, Setswana (Bantu languages) and Namibian Sign Language (Ministry of Basic Education, Sports and Culture [MBESC], 2003).

The language policy in Namibia stipulates that every child must be taught in his/her mother tongue from Grade 1 to 3 (Ministry of Education and Culture [MEC], 1993; (MBESC, 2003). Aligning itself to the recent restructuring of the Namibian school curriculum that was implemented in 2015, the language policy draft of 2013 proposed the use of mother tongue instruction at the whole Junior Primary phase that is, from Pre-Primary to Grade 3. Mother tongue, termed as first language in the school curriculum, is also taught as a subject from Grade 1 to Grade 12. Similarly, English is taught as a subject from Grade 1 to Grade 12. English is the medium of instruction from Grade 4 up to Grade 12, with Grade 4–5 serving as transitional periods into English medium. The transition is aimed to happen gradually, with a bigger percentage of Mother tongue concept use still in the beginning of Grade 4 and gradually reducing Mother Tongue and increasing English usage by the end of Grade 5. At institutions of higher learning such as university, English continues to be the medium of instruction. English is also the sole official language of the country, is used in the workplace as well as in all formal public places and occasions.

Although the language policy has good intentions to allow children the opportunity to learn in their mother tongues in the first four years of school (Pre-primary to Grade 3), there are numerous instances where this policy is not being realised at some schools. This is much so for schools in multilingual settings such as Windhoek, the capital city, and other towns in the country, where children from different language groups are found in one classroom. However, even in this case, the policy has provided that the predominant languages in the area where a school is located, should be used (MBESC, 2003; MEC, 1993). The policy is also sympathetic to minority languages suggesting that they should also be offered at some schools even though they might not be the predominant languages in the particular area. This is to avoid language extinction for minority languages.

Unfortunately, challenges have extended to some monolingual settings too, where one does not expect the language policy implementation to be a complex issue. One is likely to find schools in the heart of a homogeneous region that opt to use English medium instead of the local language of the region or area. This practice is, undoubtedly, linked to the higher status that the English language has gained over the indigenous languages since the country got independence in 1990. There has been a lot of emphasis on the teaching and use of the English language in and outside the classroom, it being the official language and language of instruction from Grade 4 up until university and beyond. This emphasis on English, its dominant functionality in the society and life after school on the one hand and lack of emphasis and functionality of indigenous languages on the other, has gradually planted a deep-rooted misconception in people's minds that English is superior than local languages and it widens study and employment opportunities that local languages cannot. This mindset is currently the biggest challenge in the Namibian education system with regards to the language policy.

Some parents do not prefer their children to follow the Mother tongue stream, but enrol them in the English stream. There is evidence that the majority of parents and some teachers in Namibia are not aware of the pedagogical advantages of learning in the mother tongue in the first years of school (Legere, Trewby, & van Graan, 2000). It is common for schools in Namibia to opt for the English medium (Harris, 2011), although they have an obligation to offer Mother tongue medium of instruction, according to the language policy. Perhaps, the biggest challenge is that the monitoring of the implementation of the language policy from the Ministry of Education does not seem to be effective. This sentiment is widely shared by several language enthusiasts (Brock-Utne, 1997; Legère, Trewby, & van Graan, 2000; Totemeyer, 2009; Wolfaardt, 2010). These challenges are unfortunate to note, given a wide range of research that provides evidence on countless benefits of learning in the Mother tongue (Butzkamm, 2003; Kosonen & Benson, 2013; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2008).

1.3 Mother tongue and cognitive processes in learning to read

The importance of the first language or mother tongue on overall learning is well established by research (Butzkamm, 2003; Kosonen & Benson, 2013). Links have been made between proficiency in the mother tongue and the learning of mathematics and science, for example (Okebukola, Owolabi, & Okebukola, 2012). Perhaps the strongest link that literature has revealed is between the skills in the first language (mother tongue) and the acquisition or learning of the second or additional language (Butzkamm, 2003; Ouane & Glanz, 2010; Swan, 1997). The quote below underlines the overarching power of the mother tongue.

> Using the mother tongue, we have (1) learnt to think, (2) learnt to communicate and (3) acquired an intuitive understanding of grammar. The mother tongue opens the door, not only to its own grammar, but to all grammars, inasmuch as it awakens the potential for universal grammar that lies within all of us. This foreknowledge is the result of interactions between a first language and our fundamental linguistic endowment, and is the foundation on which we build our Selves. It is the greatest asset people bring to the task of foreign language learning. For this reason, the mother tongue is the master key to foreign languages, the tool which gives us the fastest, surest, most precise, and most complete means of accessing a foreign language. (Butzkamm, 2003, p. 31)

Butzkamm (2003) describes how the cognitive process of language learning is dependent on the mother tongue or first language and the fact that it is this mother tongue that first needs unlocking before one learns another language. This view has been well-articulated in literature, although as we have seen, it is still not yet well-processed by many. An international body of literature has emphasised that learning in the mother tongue or just strengthening the foundation of language in the mother tongue allows children to develop adequate cognitive, linguistic and academic skills (Benson, 2004; Taylor & Coetzee, 2014; Totemeyer, 2009, 2013). Cummins and Swain (2014), well-known scholars in bilingual mother tongue education have also provided some evidence about the relationship between bilingualism and cognitive functions as well as metalinguistic development. One of the findings from their work was that children who had mastered two languages (one being the Mother tongue) had a linguistic advantage over monolingual children and were found to be better at concept formation than their monolingual counterparts. Dahm and Angelis (2017) also reported in their study that multilingual French children who had Mother tongue literacy performed better in a Language and Maths test than those who did not learn to read in mother tongue. Although, most African countries have been advocating additive bilingualism over the past decade (Banda, 2010), this has not yet been fully realized in most countries. Literacy learning thrives in additive bilingualism school environments as Mother tongue is accorded enough time of learning before second language is introduced. Countries such as Tanzania who use Mother tongue as a language of instruction in the whole primary phase are good case studies where early literacy outcomes are much

better than in countries such as Namibia, South Africa, Zambia, Kenya and others (Banda, 2010; Kobia, 2017; UNESCO, 2008).

Literature has further emphasised the importance of being introduced to initial literacy in the Mother tongue (Benson, 2004; Totemeyer, 2009). Learning to read in a language that one already speaks is a better learning experience than learning to read in an unfamiliar language. Cummins and Swain (2014) also argue that a certain degree of proficiency in the Mother tongue is necessary to avoid reading difficulties. It is further believed that, one only learns to read once (Haddad, 2008). Using Cummins theory of interdependence hypothesis, Piper and Miksic (2015) explain that the child does not have two places to store language, but rather a single underlying language proficiency. So, when children learn any strategy to read, for example decoding or comprehension strategies, (which is most influential in the mother tongue or familiar language), they use those strategies as a basis for reading any other language. From Piper and Miksic (2015) study of children learning to read in Mother tongue in Kenya and Uganda, it was found that children's oral reading fluency transferred across languages as they were applying the same methods to read words in languages they had less exposure to in school. The understanding is also that, as children first acquire Mother tongue and hear its spoken language, when they start learning to read and write in Mother tongue, it is easier for them to make connections between the sounds they hear in spoken language and the symbols they see in written language. This, in itself, is the beginning of phoneme-grapheme connection, a key process in learning to read and write. If we begin to understand how children learn to read and write in our local languages/mother tongues, I believe that we begin to understand how they will learn any other language as well as how they will start a lifelong journey of 'reading to learn'.

1.4 Oshikwanyama language background and structure

Oshikwanyama is one of the 14 Namibian languages used in schools. It has its origin in the Niger-Congo language descent, forming part of the Bantu language family (Hasheela, 1985). It is spoken by 35% of people in Central Northern Namibia (well-known as Ovamboland) and 13.5% of people in Angola, the neighbouring country on the northern border of Namibia, where it has its roots (The people of Namibia, n.d.). In Ovamboland, there are eight language groups namely, Oshindonga, Oshikwanyama, Oshikwambi, Oshingandjera, Oshimbalantu, Oshikwaluudhi, Oshikolonkadhi and Oshimbadja. Collectively, all these languages are referred to as 'Oshiwambo', making it an umbrella term for all the languages and dialects of the Ovambo people. All the Oshiwambo languages are mutually intelligible, which implies that speakers of these languages/dialects understand one another to a larger extent, although there are also marked differences with regards to linguistic features, mostly vocabulary, phonetics and tone. From the Oshiwambo languages or dialects, only Oshindonga and Oshikwanyama languages have standardised orthography and

are used in schools. The Owambo people form 48.9% of the population, making them the largest group in Namibia (Namibia Statistics Agency [NSA], 2014).

The history of Oshikwanyama language in print, like the Oshindonga language, its close variant, begun with the missionaries. It is recorded that the first missionary to put Oshikwanyama language to paper was P. H. Brinker from the Rhenish missionary (Hasheela, 1985). In his book '*VII LEHRBUCH DES OSHIKWANYAMA*' published in Germany in 1891, he had lists of Oshikwanyama, Oshindonga and Otjiherero words translated into German language. The first book that was exclusively written in Oshikwanyama language was '*Omukanda wokakatekismo ka Dr Martin Luther*' (*Catechism of Martin Luther*), published in Cape Town in 1893. This was followed by books such as '*Ee-Evangelio 'Ne: Okutia: Omukanda uo-Evangelio jaMateus, NouòjaMarkus, NouòjaLukas, NouòjaJohannes M'ondaka Oshikuanjama'* in 1896 in London. The translation of this title was '*The four gospels in Kuánjama, a dialect of the Bantu tribe, the "Ovakuánjama" of the Ov-ámbo group in Northern Ovámboland*'. The book '*Omahepaululo yoilonga yoaaposteli*' was published in 1902, in London. The hymn book '*Omukanda womaimbilo mOshikwanyama*' with 86 hymns, together with the liturgy book were published in Giitersloh in 1906. It was edited and published in Tsumeb in Namibia first in 1917, and then the third edition in 1921 and fifth edition in 1929. '*Omukanda uomaimbilo uOngeleka Onuevangeli*' was written by W.A. Björklund (nicknamed 'Mbyele') and Kaino Harjanne. It was published in Windhoek in 1944. Since then, many books were written, especially after the establishment of the Evangelical Lutheran Church in Namibia (ELCIN) Publishing house in 1901. The bible was translated into Oshikwanyama by the team under the leadership of Björklund (Mbyele) with local writers Sakaria Tuhadeleni, Andreas Shapota, Gabriel Taapopi, Rev. Policaper Haihambo and Rev. G. Namhweya. The Oshikwanyama bible was published in 1974, 20 years after the Oshindonga bible was published in 1954 (Hasheela, 1985; Tirronen, 1977).

Before people could read the bible, however, they needed to know letters. The first book was published in Oshindonga in 1877 and it was well-known as the 'ABD'. The author of this book was Pietari Kurvinen, a Finnish missionary (Hasheela, 1985). The first church newspaper in Oshindonga was titled '*Osondaha*', which means Sunday. It was published once a month and it later became '*Omukwetu*' (belongs to us/our relation). It included Oshindonga, Oshikwanyama and Rukwangali languages. *'Omukwetu'* was first published in 1901 (Tirronen, 1977) and is in existence to this date.

Efforts to further develop the descriptive grammar of the language went on. Liina Lindström formulated grammatical rules for Oshiwambo language (Hasheela, 1985; Tirronen, 1977) which began to be used in schools. As expected, there were also challenges for writers, who were of European origin, to find graphemes for sounds that do not exist in their own languages. In bringing up the orthography, graphemes chosen to mark phonemes underwent several changes. For example, Herman Tönjes, a teacher who taught in Omupanda in Angola during 1899–1907, used letters in the following way: for example, instead of the present day grapheme 'sh'/ʃ/, he used only letter 's'; for the present day grapheme 'ngh'/*ŋh/*, he used 'n' with a diacritic on top and for the present day

grapheme 'mh' */mh/*, he simply used 'm' and so on. The letter 'x' was discarded and re- placed by 'h' as it would be in Oshindonga language, but afterwards, it was reinstated. The suggestion to use the graphemes 'y' instead of 'j', and 'w' instead of 'u' were also endorsed in a language conference in Oshikango in 1962.

Toivo E. Tirronen, a prominent Finnish missionary in the Namibian education history, started writing grammar books for junior as well as high school levels. He wrote books such as '*Elaka loomeme'* (Mother tongue). Although most of his books were originally written in Oshindonga language, these were translated into Oshikwanyama language. A local writer Gabriel Taapopi took over from the missionaries and wrote many readers in a series of '*ILA TU LESHE'* (Let's read) and '*LIHONGENI'* (Learn). From there on, more Namibian writers took on the task and books from different genres were written and published. Subsequent authors of note for Oshikwanyama language have been, A. L. Nghifikua, B. K. Haimbodi, E. Ndeutepo, M. Hamutumwa (Hasheela, 1985) and the legendary Paavo Hasheela, who wrote most of the early reader series for government schools, among others.

The first standardised orthography for Oshikwanyama language was published in 1968. To date, there has been three publication versions of the orthography, the latest being Oshikwanyama Orthography 3. This version was compiled by the Oshikwanyama language Panel at NIED (NIED, 2004). It replaces the second version Oshikwanyama Orthography 2 that was compiled by the Native Language Bureau of the Department of National Education in collaboration with the Oshikwanyama Language Committee and the Native Language Board in previous years (NIED, 2004).

Like many Bantu languages, Oshikwanyama language has a transparent orthography. This implies that the correspondence between graphemes and their respective phonemes is direct. Hence, letters 'a', 'e' or 'o' are always sounded the same way. The following words will, therefore, be read exactly as they appear: 'ame'/*amɛ*/(I, me), 'meme' /*mɛmɛ*/ (mother), and 'okaana' /*oka:na*/ (baby). Oshikwanyama language orthography uses 22 letters of alphabet, with the letters: 'c', 'q', 'r' and 'z' omitted, and used only in loan words or names not of Oshikwanyama origin. Further, the letters 'g', 'j', and 's' do not occur in isolation in Oshikwanyama language. Instead, they are used in combination with other consonant letters to make up multiletter graphemes. The letter 's' is always paired up with the letter 'h' forming the digraph 'sh' /ʃ/in words such as 'shaashi' (because), 'shange' (mine), 'oshili' (the truth) and many others. The letter 'j' (pronounced as the semivowel (glide) /*j*/ when in initial position) also does not occur in isolation. It is always part of the digraph 'dj' /*dʒ*/ and trigraph 'ndj' /*ndj*/ which is rather a digraph in Oshikwanyama because the /*j*/ phonetically behaves as a semivowel (glide) rather than a consonant. When in middle position as in words such as '*djala*' (get dressed), '*ondje*' (a scorpion), '*ondjala*' (hunger) and so on, the sound comes close to the English sound /*dʒ*/. Moreover, the letter 'g' has only one word in which it is used in isolation, in Oshikwanyama language, '*egege*' /ɛɣɛɣɛ/(a plant that grows in the water). The rest of the instances, it is always used with the nasal 'n'/*ŋ*/ to form digraphs such as 'ng' /*ŋg*/ in words

such as '*ongobe*' (cow), '*ngaashi*' (such as), '*ngeno*' (if), trigraphs in words such as 'ngh' as in '*nghene*' (how), '*onghenda*' (grace) and so on. Many Oshikwanyama surnames also bear this prefix 'nghi-'(which denotes the negative) as in surnames such as '*Nghifikwa*' (I will not be reached/you will not reach me), *Nghishekwa* (I am not to be mocked), '*Nghishongwa*', '*Nghikembua*', to mention but a few. Table 1 below shows the phonemes and graphemes in Oshikwanyama language.

TABLE 1 Phonemes and graphemes in Oshikwanyama language

	Phonemes	**Graphemes**
Vowels	/a/ /ɛ/ / ɪ/ / ɔ / /u/	a e i o u
Consonants	/b/ /d/ /f/ /ɣ/ /h/ /j/	ɓ d f g h j
	/k/ /l/ /m/ /n/ /p/ /s/	k l m n p s
	/t / /v/ /x/	t v x
Semi-vowels	/w/ /j/	w y
Multiletters (Digraphs,Tri-graphs, quadugraphs)	/bw/	bw
	/dʒ//dw/ /nd/ /ndj/ /ndjw/ /ndw/	dj dw nd ndj ndjw ndw
	/fj/ /fw/	fy fw
	/kw/	kw
	/lw/ /lj/	lw ly
	/mb/ /mbw/ /mbj/ /mh/ /mhj/	mb mbw mby mh mhy
	/mj/	my
	/mhw/ /mw/	mhw mw
	/mw/	mw
	/ ŋg/ /ŋh/ /ŋhw/ /ŋgw/	ng ngh nghw ngw
	/nh/ /nhj/ /nhw/ /nw/ / ɲ/ / ɲw/	nh nhw nhy nw ny nyw
	/pw/ /pj/	pw py
	/ʃ/ /ʃw/	sh shw
	/tw/ /tj/	tw ty
	/vj/ /vw/	vy vw
	/xw/	xw
	/jw/	yw

Oshikwanyama language has an open syllable structure in which every syllable ends in a vowel letter. Most common word structures are shown in Table 2.

Like many Bantu languages, Oshikwanyama language is a tonal language, the tone marking tense, aspect, mood and context (Nurse & Phillipson, 2003). Tone is both lexical and syntactical, influencing meaning. In the following example, the word *'ongala'* takes different meanings depending on the tone/stress sequence. A high-low-low tone *'óngālā'* means a flower, while a low-high-low *'òngálà'* carries two meanings depending on context. The one meaning is 'cattle thirst' while the other is a verb meaning to 'gather' or 'come together'.

Stress is also both lexical and syntactic, mostly placed on the first and second syllables both for nominal, verbal or adjectival stress.

The morphological structure of Oshikwanyama language can be described as systematic. Nouns are classified into what is known as noun classes which are determined by the prefix and a conjunctive concord in agreement with the prefix. To illustrate this, all the nouns that start with the prefix '*omu*' belong to noun class one and are used with the conjunctive or auxiliary concord '*ota*' in the present tense and '*okwa*' in the past tense. As an example: *Omumati ota*… (The man is…), but '*Okaana otaka*… (The baby is …) and '*Oshikombo otashi*' (The goat is …). The morpheme '*ka*' and '*shi*' in the conjunctive concord must agree with the noun prefix '*oka*' in '*okaana*' (baby) and '*oshi*' in *oshikombo* (goat) respectively. All the nouns that start with the prefix '*oka-*' belong to noun class 7 and all the nouns that start with '*oshi'* belong to noun class 4, for example. There are 12 noun classes altogether in Oshikwanyama and Oshindonga languages, the last three being locative classes in the form of prefixes: *pu-*, *ku-*, *mu-* or *po-*, *ko-*, *mo-*, denoting location (places). Noun classes are a common characteristic of most Bantu languages (Greenberg, 1977; Maho, 2003; see Appendix 1).

TABLE 2 Common word structures in Oshikwanyama language

Word structure	**Examples of words**	
CV	*vo*	(they/them)
	ka/ke	(cut a tree or wood)
VCV	*ota, oka*	(is, conjunctive concord between subject and verb)
	efo	(leaf)
CVCV	*meme*	(mother)
	tate	(father)
	hafa	(happy)
	lifa	(look after livestock)
VDV	*ombwa*	(dog)
	inda	(go)
	okwa	(he/she did – conjunctive concord between subject and verb, in the past tense)
DV	*lya*	(eat)
	nwa	(drink) imperative forms
DVCV	*shiwa*	(something is nice/good)
	ngeno	(if)
CVDV	*pondje*	(outside)
	konga	(look for)

Note. D stands for digraph or any consonant cluster. For longer words, the structures are repeated or conjoined

The basic noun structure of Oshikwanyama language consists of an initial vowel, basic prefix and a stem (Rosburgh, 1980). This can be seen in words such as: *oshikombo* (goat), where '*o*' is the initial vowel, '*shi*' is the basic prefix and '*kombo*' is the word stem; *etango* (sun), where '*e*' is the initial vowel and '*tango*' is the stem. The initial vowel in nouns can only be either '*o*' or '*e*'. However, a vowel-less initial and prefix-less noun is also possible as in the following words: *meme*

(mother), *tate* (father), *meekulu (*grandmother), *tatekulu* (grandfather*),* mostly in family relation nouns. The following structure is also common in Oshikwanyama morphological structure of nouns:

stem + suffix = *meme* + *mweno* = *mememweno* (mother-in-law)
tate + *mweno* = *tatemweno* (father-in-law)
meekulu + *lulwa* = great-grandmother

The four morphological structures are shown in Table 3.

TABLE 3 Morphological structures in Oshikwanyama language

Morphological structure	**Example of word**
Prefix + stem + suffix *omu* + *mati* + *lela*	*omumatilela* (a gentleman): *omu* – prefix denoting the beginning of a noun in noun class 1; *mati* – word stem denoting a young male person; *lela* – a suffix denoting something pure/real/definite/of prime quality
Prefix + stem *e* + *tango*	*e* – prefix denoting a noun in noun class 3; *tango* (word stem denoting 'the sun'
Stem only *meme*	*meme* (mother)
Stem + suffix as in: *meme* + *mweno*	*mememweno* (mother-in-law): *meme* – stem; *mweno* – suffix denoting marriage relation

Regarding spelling, as in some Bantu languages, the orthography of Oshikwanyama language is governed by what is known as disjunctive writing. Disjunctive writing refers to the writing conventions that ensures that, in a syntactical structure, word boundaries are correctly demarcated in a way that every part of speech stands on its own (NIED, 2004). This writing ethos is central in the syntactical structure of the language and has implications for the semantic structure of words and sentences too. In phrases such as '*otali*' and '*ota li*', if '*ota*' is conjoined with *'li'* as one word, it represents a conjunctive/auxiliary concord which means an object (in noun class 3) is doing something in the present tense. However, if the two are written separately as *'ota li'*, then *'ota'* represents the conjunctive/auxiliary concord in the present, while *'li'* represents a verb which means 'eating'. This can be seen in the following sentence: *'Eshina otali shuna shanimanima'* (The train is going backwards) and *'Ye ota li oshifima'* (He/She is eating porridge). Different Bantu orthographies follow either conjunctive or disjunctive writing systems. As a contrast of disjunctive writing, conjunctive writing does not demarcate word boundaries according to part of speech. Some South African languages such as isiZulu and isiXhosa are known to belong to the conjunctive writing system. A sentence such as 'I like them' will be written as *'ngiyabathanda'* in isiZulu, whereas in Sotho, another South African language, it will be written disjunctively as follows: *'ke a ba rata'* (Taljard & Bosch, 2006) and in Oshikwanyama *'Ondi va hole'*. Many spelling rules accompany disjunctive writing and it is the biggest challenge in the writing of Oshikwanyama and Oshindonga languages as it is in other Namibian languages too such as

Otjiherero, Khoekhoegowab and others. However, in the early years of learning to write, disjunctive writing is not the focus as children are barely learning to form letters, spell words and produce short sentences in written form.

2 THEORETICAL FRAMEWORK

2.1 Learning to read and spell

The present thesis approached the process of learning to read and spell from the point of view of reading and spelling as technical skills. This approach was followed due to the pioneering nature of the study as the rationale for undertaking this research was that, it is still unknown how children learn to read and spell Oshikwanyama. The study examined and objectively captured this process. Learning to read and spell in this thesis are, thus, discussed as technical skills and aspects such as social and cultural contexts were not examined. This view of literacy is referred to as the autonomous model of literacy as opposed to the ideological view of literacy (Street, 2000). Street (2000) describes the autonomous model of literacy as a type of literacy that views literacy as neutral and universal and disguises cultural and ideological aspects of it while he describes its contrast, the ideological model, as a social practice not simply a technical and neutral skill, but as always embedded in socially constructed principles as it varies from one context to another. The stance taken in this study is not to argue that, the autonomous model of literacy is the right view to examine literacy acquisition and development in an indigenous Namibian language, in which like other developing countries, contextual factors are inevitable. It was, rather a researcher's decision of what to focus on as a start to scientific literacy studies in a local language in which such studies are limited and what seemed to be most urgent in providing answers to the question 'how do our children learn to read and spell in one of our local languages'? In this sense, therefore, focusing on technical processes of the eyes reacting to print stimuli and the reader eventually decoding and spelling words was regarded as a good start. Due to the paucity of literacy research on the African continent, the theoretical part is also largely based on Western studies, most particularly Finnish studies. The rationale behind this approach was partly because Finland is one of countries with well-

established literacy research and partly because Finnish language is also a transparent language as is Oshikwanyama, the language under study. So, this approach was considered twofold beneficial to the thesis.

The process of learning to read and spell is known to include many complex processes. Among these processes, orthographic processing and phonological processing stand out (Chansa-Kabali, 2014; Ehri & Soffer, 1999; Florit & Cain, 2011; Hulme & Snowling, 2013). Put simply, the reader uses knowledge of visual representation of letters stored in the brain. The eyes set on words on a page, activating visual input. Existing orthographic knowledge in the brain is activated to help the reader to recognise the letters in the words. These written symbols are then connected to their corresponding sounds using the phonological knowledge available in the memory. This letter-sound mapping has been confirmed by many scholars to be central in the processes of decoding as well as spelling (Ehri, 1987, 2000; Nevills, 2011; Share, 1999, 2008). Mastering letter-sound correspondence requires understanding of the alphabetic principle, an awareness that there is a systematic relationship between graphemes of the written language and phonemes of the spoken language. Early exposure to print supports the understanding of the alphabetic principle.

In the process of decoding, symbols are connected to sounds. The process is different between an experienced reader and a beginning reader. In addition to existing orthographic and phonological knowledge, an experienced reader has his letter and word recognition automatised due to numerous exposures to the same letters or words and thus, has strong representations of these already stored in memory. So, also larger units are recognised quickly and as wholes instead of having to rely on letter-by-letter coding as is the case with a beginning reader. This is what the dual-route theory has identified as the lexical route. The other route, known as the non-lexical route, is based on phonological recoding (Jobard, Crivello, & Tzourio-Mazoyer, 2003; Share, 1999, 2008; Treiman, 2017). Beginning reading is characterized by a labourious process of recognizing letters, mapping them to their corresponding sounds (if known by memory), blending the sounds to finally get to the pronunciation and meaning of the word.

Ehri (1987) discusses three stages of reading namely, pre-reading, initial reading and decoding and the last stage when children start to attend to graphic cues. She elaborates that, during the *pre-reading stage, Stage 0,* children acquire oral language skills, concepts of print, and show many signs of emergent literacy such as identifying signs in the environment. It is also during this stage that they begin to scribble, copy or invent their own spelling to label drawings. In the *initial reading and decoding stage, Stage 1*, they learn how letters symbolise phonemes in words. They also begin to acquire sight vocabulary and use this to read simple words. When they encounter unfamiliar words, they use context cues to guess the words. When they learn more about letter-sound relations, they begin attempting to decode words. As Ehri puts it, it is in this stage when readers become glued to print as opposed to meaning. In the last phase, *Stage 2*, readers become unglued from print and are able to attend to both graphic and context cues in their reading. They are able to read many more words accurately,

automatically and rapidly. It is worth mentioning, however, that these stage models are based on English orthography and might not be applicable as such to transparent orthographies.

The area of spelling has not received the same amount of research as reading. However, a number of studies show that reading and spelling development go hand in hand (e.g., Ehri, 2000; Lerkkanen, Rasku-Puttonen, Aunola, & Nurmi, 2004; Morrow, 2012; Rapp & Lipka, 2011). Some of these studies have provided evidence that the two skills have a reciprocal relationship in transparent languages (e.g., Lerkkanen et al., 2004). It is logical to conclude that there is a relationship between reading and spelling as in both skills, knowledge of the grapheme-phoneme correspondences is the basis. Brummit-Yale (2007) particularly pointed out phonics knowledge as the most basic knowledge required for spelling. As clarified already, during the process of reading, the reader connects the symbols (letters) to their corresponding sounds (phonemes) and then decodes the words by sliding from phoneme to phoneme. In spelling, the process is opposite: the speller analyses the sounds (phonemes) of words and connects them to their corresponding symbols (graphemes). Share (1999) also suggests that children learn to spell as they encounter words while reading as well as during other activities.

Even in Ehri's (1987) reading stages, spelling is involved in the first stage when the readers start to scribble. This also suggests an overlap during the development of these two skills. We continue to see this overlap in Ehri's (1987) model. During the first stage, *Stage 0*, once the prereaders have learned the letter names, they can use this information to invent semi-phonetic spellings of words. They discriminate one or two sounds from the word heard and represent these with letters. In the very beginning it is usually the first or last sound that they use to represent the word. For example, if they hear the word *'ongobe'* (cow), they can represent that with 'o b' or 'O B'. In *Stage 1,* their spellings become more complete phonetically. This is the same stage where they learn about letter-sound relations, phonemic segmentation and decoding. In the last stage, *Stage 2*, as in decoding, children are more advanced as they learn more about spelling patterns and adopt both morphemic and phonetic patterns and spelling rules.

Another area widely linked to learning to read and spell is orthographic depth. Ehri (2000) describes orthographic depth as the degree of correspondence between sounds and letters that represent them and classifies orthographies into deep (opaque) and shallow (transparent). Studies on orthographic depth have established that reading acquisition in deep and shallow orthographies occur at different rates. A study by Seymour, Aro and Erskine (2003) examined thirteen European orthographies through assessments of letter knowledge, familiar word reading and non-word reading. The study focused on two dimensions of orthography, namely orthographic depth and syllabic complexity. The study had the 13 languages varying on the depth of orthography as well as syllable structure complexity. The Finnish language was on the shallow extreme while the English language was on the deep extreme of orthographic depth. The

main finding from this study was that children from the majority of countries with more shallow orthographies became accurate and fluent in foundation level reading before the end of the first school year. Reading accuracy reached the ceiling very quickly in these transparent languages. The difference in the rate of achieving reading accuracy is attributed to the regularity of grapheme-phoneme correspondence. The inconsistencies in the deep orthographies such as English makes its reading acquisition more complex than in the transparent orthographies. Researchers in this study hypothesised that the deeper orthographies induce a dual foundation that is, both logographic and alphabetic, which takes more than twice as long to establish as the single foundation required for the learning of a shallow orthography. This makes learning to read in opaque orthographies much more taxing. Most Bantu languages, including Oshikwanyama, have shallow orthographies because their sound- symbol correspondence is transparent and regular. One, therefore, expects the results of this study to be more characteristic of transparent languages.

When it comes to spelling, Treiman's (2017) study is a good reference point as she reviewed studies and main theories on spelling. She discussed Stage and Phase theories, Dual-route theories and the Integration of Multiple Patterns (IMP) (hers and Kessler's own theory) and evaluated them. Stage and phase theories have Ehri (2000) and Frith (1985) as proponents. They identified four stages in which children go through when learning to spell: the *Pre- alphabetic phase* where children do not use letters for their sound values; the *Partial alphabetic phase* where they map some of the sounds in words to letters; the *Full-alphabetic phase* where children become able to map all of the sounds in words; and the *Consolidated alphabetic phase* where children begin to treat common letter sequences as chunks and follow graphotactic conventions of their language. In short, stage and phase theories conclude that children use phonological knowledge when spelling. The weakness of this theory was pointed out as its failure to acknowledge non-phonological knowledge that children use from the beginning when they start to attempt writing.

Similar to reading, dual-route theories hold that spelling is learned using both non-lexical as well as lexical routes (Treiman, 2017). The non-lexical route is the same as the one suggested by the stage and phase theories, that of linking phonemes to graphemes, phonological recoding in other words (Share, 1999). The lexical route on the other hand is used when children use spellings of whole words that have been stored in memory. Proponents of the dual-route theories also believe that there are some words that are supported by both lexical and non-lexical routes. What they also conclude is that young children rely heavily or even exclusively on the non-lexical route (Sprenger-Charolles, Siegel, & Bonnet, 1998) and use the lexical route as they get older (Treiman, 2017), signifying that they have a much larger word storage in memory than when they were younger. However, Treiman (2017) alerts that the use of lexical route plays a role mostly in deep writing systems as opposed to shallow orthographies. In the latter, it is believed that children rely more on the non-lexical route. This is

logical since in shallow orthographies, spelling based on grapheme–phoneme mappings is a reliable process.

The last theory reviewed by Treiman (2017) was hers and Kessler's (2014) IMP. They postulated that children learn about two classes of patterns when learning to spell, namely the outer form of writing and the inner function of writing involving links between written symbols and linguistic units, that is, phonology, morphology and other aspects of linguistic structure. IMP suggests that children begin to learn at an early age about visual forms of spelling (around 2 - 3 years of age). This review of studies on spelling also concluded that aspects of writing that cause difficulties for typically developing children are the same ones as those that cause difficulties for children with spelling difficulties. Consonant clusters, for example, have been noticed to cause problems for children across the range. However, the pace of overcoming these difficulties could be different (Treiman, 2017). The study recommended more research on how to measure children's spelling abilities so that it does not just remain a dichotomous correct-incorrect score, but done in ways that reveal more detailed aspects of spelling development.

2.2 Precursors of reading and spelling skills

Numerous studies have documented the close links between pre-language skills and literacy development (Gallagher, Frith, & Snowling, 2000; Lerkkanen et al., 2004; Lundberg, 2009). A number of skills have been shown to be predictive of literacy development. Among those skills, phonological awareness, letter knowledge, Rapid Automatised Naming (RAN), vocabulary skills, oral language and listening comprehension skills have been noted. This predictive ability of different factors confirms that the ability to read and spell does not happen in a vacuum.

Although studies come with mixed findings with regard to the role of phonological skills in reading, most studies agree that it has predictive power in learning to read and spell. Lundberg (2009) asserts that the association between phonological awareness and learning to read and spell is one of the most robust findings in cognitive psychology and has been replicated over and over again. However, contrasting findings have been shown by, for example, Landerl et al. (2019) and Ziegler et al. (2010). Some studies concluded that phonological awareness, was a more important predictor in opaque orthographies than in transparent orthographies. Some claim that phonological awareness is important in all languages. Malda, Nel and Van de Vijer (2014) examined the relationship between phonological awareness and reading in Grade 3 Setswana learners in South Africa and found significant relations between phonological awareness and word and text reading ability. Another South African study by Diemer (2016) that assessed the relationship between phonological awareness in Grade 3 learning to read in Xhosa, found that children were more sensitive to syllables than to phonemes as many learners had not developed sensitivity to

phonemes by Grade 3. Awareness of syllables than phonemes was also confirmed in Wilsenach's (2019) study when she found that Grade 3 learners learning to read Northern Sotho were significantly better at identifying syllables than phonemes. However, in the same study, phoneme awareness predicted reading outcomes more accurately than syllable awareness did. Other studies emphasise the bidirectional role of phonological awareness that it influences reading and spelling development, while learning to read and spell also influences phonological awareness in return (Lerkkanen, 2003; Ziegler et al., 2010). Whatever conflicting ideas there might be, it seems the connection between phonological awareness and reading is stronger in the early years than in later years, while the contribution to spelling skills continues in the higher grades (Landerl & Wimmer, 2008). It is also no doubt from research that, phonological and/or phoneme awareness is an essential part of learning a transparent language.

Letter knowledge has also been identified as a precursor for reading and spelling skills. Letter knowledge at 45 months old children was also the strongest predictor of literacy level at age 6 (Gallagher, Frith, & Snowling, 2000). In Lerkkanen's (2003) study of Finnish children from Grade 1 to Grade 2, letter knowledge was also a strongest predictor of word decoding skill in the beginning of the school. Lyytinen et al. (2006) study also found letter naming to be a consistent predictor of reading development. These results were replicated in Torppa, Lyytinen, Erskine and Lyytinen's study (2010), along with the predictive role of other skills, such as rapid naming, morphology and phonological awareness.

RAN forms part of the cognitive skills underlying reading ability too. RAN is thought to measure retrieval of visual-verbal associations from long-term memory with tasks requiring typically nam- ing of familiar objects, letters, colours, or digits presented in sequence (Närhi et al., 2005). It seems therefore logical that this skill has been linked to reading ability as the underlying processes are somewhat similar. Torgesen, Wagner, Rashotte, Burgess and Hecht (1997) classify RAN, phonological awareness and short-term memory as part of the same phonological processing construct.

RAN has been particularly linked to reading fluency in several consistent orthographies (e.g., Landerl & Wimmer, 2008; Torppa et al., 2012; Salmi, 2008). In Salmi's (2008) study, serial naming speed (serial RAN) positively predicted reading speed (fluency) while serial naming accuracy predicted reading accuracy. In their longitudinal study, Wimmer and Landerl (2008) found that naming speed predicted reading fluency even up to Grade 8. In another study by Poulsen, Juul and Elbro (2012), RAN was a particularly strong correlate of reading fluency, while other predictors such as phonemic awareness were better predictors of reading accuracy. Important to note about this finding is, that phonemic awareness and letter knowledge mediated the RAN–reading relationship moderately, thus showing the interrelatedness of these cognitive skills.

Studies have also documented the link between rapid naming and spelling skills. In a study by Quellete, Martin-Chang and Rossi (2017), spelling and read-

ing speed were measured on the same word items. The results showed that words that improved in spelling accuracy were read more rapidly at posttest than words that did not improve in spelling, thus showing a strong positive relationship between spelling accuracy and reading speed. A study conducted in the United Kingdom between naming speed, phonological awareness and spelling found that RAN made a significant unique contribution to spelling performance. Children with low naming performance were significantly poorer spellers (Stainthorp, Powell, & Stuart, 2013).

2.3 Developmental trajectories of reading and spelling

Several studies have demonstrated that in transparent languages such as in Oshikwanyama and Finnish, reading and spelling skills development is strongly associated and that developmental paths of children's reading and spelling skills development have many things in common. They usually have same predictors (Gallagher et al., 2000; Leppänen, Niemi, Aunola, & Nurmi, 2006; Lerkkanen et al., 2004; Torppa et al., 2010; Torppa et al., 2017) and they develop reciprocally (Leppänen et al., 2006; Lerkkanen et al., 2004). However, the developmental paths of individual children's reading and spelling skills can also differ (Leppänen et al., 2006; Lyytinen et al., 2006). For example, Leppänen et al. (2006) examined the development of reading and spelling of Finnish language from preschool to Grade 1 and 2, and found that the level of spelling skills at the beginning of preschool predicted the level of reading skills at the end of the preschool year and Grade 1. Reading skills at the end of preschool and Grade 1 also predicted subsequent spelling skills. Moreover, phonemic awareness predicted reading and spelling in preschool and letter knowledge contributed to reading and spelling in Grade 1.

In the Jyväskylä Longitudinal Study of Dyslexia (Lyytinen, et al., 2006) that followed children with and without risk of dyslexia from birth to school age, four subgroups of trajectories of reading development emerged namely, the dysfluent trajectory, declining trajectory, unexpected trajectory and the typically developing trajectory. Children were tested on several skills such as receptive and expressive language, morphological knowledge, memory, letter knowledge, rapid naming and phonological awareness. The declining trajectory consisted of children whose position decreased continuously in most skill domains, except in naming speed. These were mostly children with familiar risk of dyslexia. The typical trajectory were children who were proficient in most skills such as phonology and letter knowledge. They showed progressive skill development. The dysfluent subgroup was the smallest of all, consisting of children with naming and reading speed problems. The unexpected group was relatively strong in early language skills such as receptive and expressive speech and were proficient in everything else assessed in this study, except in the domains closely associated with reading.

Lerkkanen (2003) identified three groups of readers in her longitudinal and intensive study of Finnish children from Grade 1 to Grade 2. The competent readers were children with high word decoding as well as high comprehension skills. The technical readers were children with high word decoding and low comprehension skills, while the poor readers were those with poor word reading as well as poor comprehension skills. Her study further reported about three hypotheses which contend that reading supports spelling, spelling supports reading and that reading and spelling development is interactive processes in Finnish language. While there is evidence that one needs reading knowledge in spelling and one needs spelling knowledge in reading, the interactive hypothesis surpassed all. What is interesting in both studies is that children's developmental paths vary and are taken in subgroups as well as individually. Malda et al. 's (2014) study of Afrikaans, Setswana and English Grade 3 children in South Africa revealed differences in the strength of relationship between cognitive skills and reading skills. For transparent orthographies Setswana and Afrikaans, phonological awareness was a stronger predictor for reading while for English language, vocabulary was a stronger predictor. Furthermore, predictors of reading comprehension were weaker for Setswana and Afrikaans. This is believed to be in line with theories of orthographic depth and grain theories which suggest that smaller language units are important in learning to read transparent orthographies, while larger units are important in the learning of opaque orthographies.

2.4 The role of fluency and comprehension in reading

In the beginning of learning to read, readers focus on word recognition and decoding. The ability to recognise letters, sound them out and unlock words is a triumph to an early reader or those entrusted to instruct early literacy skills. However, decoding is only a means to an end, that is to understand what is read. Achieving comprehension is one lengthy developmental pathway. Even as adult readers, we pause to repeat a sentence we just finished reading, if we failed to grasp the meaning. It is no wonder that children's pathways to comprehending what they read is a thousand times longer and curvier than adults'. Reading fluency is considered a bridge to comprehension. Fluency is defined as the ability to read a text faster and accurately at natural pace, phrasing sentences into sensible chunks and using predictable expression while reading (Kuhn & Stahl, 2003).

A skilled reader needs to be able to decode words but also comprehend the written language. The Simple View of Reading (SVR; Gough & Tunmer, 1986) has been discussed in various studies how reading comprehension is the product of efficient decoding (D) to read isolated words quickly and accurately, and linguistic comprehension (C). Thus, the following formula, R = D x C has been used to illustrate this model. The SVR model tries to demonstrate also the proximal causes of individual differences in reading comprehension by illus-

trating the four types of readers as follows: the normal/good reader who can both decode and understand what he/she reads; the poor comprehender who can decode well, but does not understand what he/she reads; the poor decoder and poor comprehender; and the dyslexic reader who can understand what he/she reads, but has difficulty to decode words. The SVR model has received considerable empirical support in several orthographies (for reviews, see Kirby & Savage, 2008; Stuart, Stainthorp, & Snowling, 2008) and it has had a major influence on reading research and practice.

Although it was first examined with reference to the English language, the SVR has been applied to transparent languages too. A number of studies (for example, Bonifacci & Tobia, 2017; Tobia & Bonifacci, 2015; Torppa et al., 2016), have found the SVR model to be valid in the context of transparent languages. Both Bonifacci and Tobia (2017) and Torppa et al. (2016) longitudinal studies, found listening comprehension to be the strongest predictor of reading comprehension in the early years. For example, reading accuracy was not a predictor in the Torppa et al. (2016) study, as reading accuracy reaches a ceiling for Finnish children quite soon after they have started school and, thus not having variance for being a predictor of the differences in reading comprehension later on. In Bonifacci and Tobia's (2017) study of Italian minority language children, reading accuracy was a statistically significant predictor only for younger children and did not have effect in the later grades. Reading speed was not a significant predictor in Boniffaci and Tobia's (2017) study either, while in Torppa et al.'s (2016) study, the effect of fluency on reading comprehension disappeared after Grade 1. These results suggest that, in transparent languages, listening comprehension is the strongest predictor of reading comprehension and that fluency and accuracy have predictive value mostly in the beginning of school career (Torppa et al., 2016).

While fluency is often operationalized as an ability to read text at a quick rate, there are many underlying processes in fluent reading. In their study, Hudson, Pullen, Lane and Torgesen (2008) showed that many elements such as decoding fluency, processing speed, vocabulary, letter-sound fluency and sight word fluency are all component skills of fluent reading. For a dyslexic reader, automaticity, characteristic to fluent reading, has not been achieved yet. The reader's attempt to recognise letters and words is labourious, lacking automaticity in word decoding.

In the Oshikwanyama first language syllabus of Grade 1–3, fluency is not explicity listed as one of the learning contents, objectives and competencies. Reading comprehension is listed as a learning content, objective and competetency and it specifically states comprehension strategies as a topic (Ministry of Education, 2014). However, it might be the case that there is limited knowledge in teachers as to what these comprehension strategies entail. Teachers are, perhaps, not so empowered with strategies to teach fluency and comprehension as they are empowered with phonics instruction strategies, for example. However, previous studies emphasise the importance of fluency and comprehension strategies for early readers. In their study in Kenya, Piper and

Zuilkowski (2015) found that oral reading rate was more related to comprehension than silent reading rate. This indicates that fluency is a salient factor in the reading equation as also shown by earlier studies of Fuchs, Fuchs, Hosp and Jenkins (2001). Various studies show that fluency supports comprehension (Muijselaar et al., 2017; Piper & Zuilkowski, 2015; Reutzel & Hollingsworth, 1993). Perfetti, Landi and Oakhill (2005) explain that comprehension occurs when the reader builds a mental representation of a text meaning, calling this, a situation model and mental model. They further present the multiple levels at which comprehension occurs, namely word level (lexical), sentence level (syntactic) and text level. Processes involved in comprehension at these levels are word identification, parsing, inferencing and monitoring comprehension through metacognition.

Kim (2017) presents her conceptual model of direct and indirect effects models of text comprehension into three levels namely, surface code, textbase and situation model. Surface code is presented as the lowest level of mental representation which is established by parsing sentences and phrases and holding them briefly in memory. Working memory, attentional control, vocabulary and grammatical knowledge are the support systems at surface code. At the next level, textbase, ideas and propositions are constructed through semantic analysis. Processes at this stage include inference making, theory of mind and monitoring one's own comprehension. Theory of mind refers to the ability to infer others' mental status such as thoughts and emotions and predict behavior, thus, capturing perspective taking. Theory of mind was also found to contribute to comprehension (Kim, 2016). The highest level of mental representation, situation model is achieved by integrating initial propositions and ideas across the text with background knowledge for deeper understanding of the text (Kim, 2017).

Inference making is known to be a good indicator of high level comprehension. When people make inferences, they tap on their general background knowledge about the specific issue that they are reading. It can be gap-filling inferencing when the reader fills the gap their mind finds when they read the text, in which case their background knowledge will come to the rescue, or text-connecting inferencing (Kim, 2017) where they mostly have to use logic. Whatever type of inference needs to be used, research studies have agreed that inference-making is a large component of text comprehension. Short-term memory was also linked to comprehension (Kim, 2017).

Literature on reading comprehension in Southern Africa point to paucity of research on this subject matter. However, few that were conducted over the past decade reveal low levels of comprehension for children in the early years. Pretorius and Klapwijk (2016) discussed the results of the PIRLS 2006 and 2011 study which provided overwhelming evidence that South African Grade 4 and 5 pupils struggle with reading comprehension. In their review of South African studies on comprehension, they found that instruction of comprehension as well as the knowledge and use of comprehension strategies in the classroom are limited. This was more so in lower performing schools than in higher performing

schools, a trend typical in developing countries. In a study by Mudzielwana, Joubert, Phatudi and Hartell (2012) they observed that while teachers were asking Grade 3 Venda speaking children to summarise, retell, interpret or evaluate what they had read, there was no explicit instruction on how to do so. This lack of modelling is also characteristic of many African classrooms (Mudzielwana, 2013). There is also a common claim that teacher training programmes do not adequately prepare pre-service teachers with the necessary knowledge and skills to teach and assess reading comprehension (Nel, 2011). Comprehension, is thus, another critical gap in Southern African reading research that needs attention.

2.5 Teacher knowledge on literacy learning and instruction

There has been growing consensus in early literacy acquisition research on the significant role of teacher knowledge on children's learning outcomes. From an international body of research, teacher knowledge appears to be an area of interest worldwide. Joshi, Washburn and Kahn-Horwitz (2015) did a review on research on teacher knowledge on different languages. The research was from English-speaking countries such as England, the United States of America and Canada, and research from countries where English is studied either as a second or foreign language such as Finland, Spain, China and Israel. A common finding from these studies was that both in-service and pre-service teachers had limited knowledge of basic language constructs underlying literacy acquisition. This is a concern as teachers can be seen as mediators between content of learning and pursuers of content knowledge, that is, children. Teacher knowledge is especially indispensable when it comes to literacy acquisition, a process that is quite demanding for children. If teachers' knowledge is questionable, then a lot could be com- promised.

Various studies highlight the importance of teacher knowledge as the major factor in teacher preparation (Joshi et al., 2015). For example, Aro and Björn (2015) report lack of knowledge of basic phonological constructs as well as explicit phonemic skills in a sample of in-service and pre-service teachers in Finland. Another finding from their study was that both groups' knowledge of morphology was markedly lower than the other constructs. Moreover, Alatalo (2015) confirmed that in Sweden, experienced teachers at Grades 1–3 with a good educational background in literacy knew significantly more on language elements and the way these elements are represented in writing than less experienced teachers with fewer or no courses in literacy instruction.

Teacher content knowledge is deemed necessary particularly with regards to underlying processes in bottom-up acquisition of literacy (Washburn et al., 2015). It is vital for teachers to have good understanding of the alphabetic principle, phonics, phonological awareness, morphology and other essential concepts in literacy acquisition. This is important to be able to give the right type of instruction. Besides this, researchers have found positive correlations between

teachers' knowledge and classroom practices (Washburn et al., 2015). A study by Purvis, McNeill and Everatt (2015) mirrors the findings by others as they found that pre-service first year students in New Zealand showed relatively low levels of explicit language structure knowledge in the areas of phoneme, morpheme and orthographic knowledge. Another study by Kahn-Howiz (2015) revealed that both pre-service and in-service teachers lacked orthographic knowledge before the course intervention.

South African studies have also reported on teacher knowledge. Pretorius and Klapwijk (2016)'s study found that the type of school where teachers are based tend to influence teachers' literacy practices, knowledge and how they perceive themselves as readers. These differences were noted in teachers in terms of whether they were teaching at private or public schools as well as whether the school was high performing or low performing. How teachers perceived their own literacy practices was also found to be different from the actual strategies they employed when observed. Teachers' own reading habitus was found to be related to literacy practices at the schools where they were teaching. Inequalities in teacher knowledge in South Africa was also documented in Taylor (2019) as he argues that the inequitable distribution of knowledge resources is one of the primary sources for weaker outcomes in South Africa. Overall, teachers were found to lack a clear understanding of reading concepts, reading development and reading methodology (Pretorius & Klapwijk, 2016).

In Namibia, lack of teacher knowledge was also reported in recent studies. February's (2018) study revealed that teachers lacked knowledge about language aspects and aspects of reading with an inaccuracy rate between 50% and 97%. Another study by Shingenge (2017) revealed a lack of conceptual knowledge of phonemic awareness in pre-primary teachers in Oshana region in Namibia. In a national report, action research done by the University of Namibia's Early Childhood Department in collaboration with UNESCO and the Ministry of Education through the Chinese-Funds-In-Trust project, it is reported that, in general, teachers did not seem to possess deep conceptual and pedagogical knowledge of the acquisition of literacy and numeracy skills in early grades (Steukers & Moller, 2014). The action research focused on pre-primary and Grade 1. However, as in reading studies, there is lack of studies on teachers' knowledge on literacy learning and instruction in Oshikwanyama language in Namibia, and this particular study will be an addition to this gap in research.

2.6 Literacy instruction in transparent orthographies

Washburn et al. (2015) stated that there is a close link between teacher knowledge and instructional practices. When it comes to literacy instruction, this link seems evident. There is a common understanding that different languages beg for different instructional approaches as dictated by characteristics of language and depth of orthography. Studies on literacy instruction of the English language, for

example, suggest a need for whole word approach to teaching and learning of literacy (Ziegler & Goswami, 2005, 2006).

On the contrary, studies on reading development of transparent languages agree that instruction from the smallest grain size, that is, phonemes and syllables makes much more sense (Aro & Wimmer, 2003; Goswami, 2005; Trudell & Schroeder, 2006; Ziegler & Goswami, 2005, 2006), before proceeding to words, sentences and paragraphs. The understanding is that, because of the consistency between sounds and letters, phonological recoding/encoding is easier in shallow orthographies as these orthographies represent the phonology of the language more than its morphology (Trudell & Schroeder, 2006).

Besides orthographic depth, another factor considered important in literacy acquisition and instruction is phonological complexity. Studies have established that phonological recoding is easier in languages that have the simple CV syllable structure (Goswami, 2005; Seymour, Aro, & Erskine, 2003; Ziegler & Goswami, 2005). The CV syllable structure is quite common in Oshikwanyama language as in words such as *'fa'* (dig or look alike), '*meme*' (mother), '*tala*' (see), '*ehafo'* (happiness), although consonant clusters before vowels are also common as in words such as *'ombili'* (peace) or '*kwata' (*catch or take).

A critical observation by various studies, notably in African countries, however, has been that, instruction of African languages, most of which have transparent orthographies, tend to follow European languages teaching methodologies of reading, in this case referring to the English language (Trudell & Schroeder, 2006). They lament that the use of foreign reading methodologies disadvantage those already marginalised where literacy is concerned. They further argue that methods currently used to teach reading in African languages fail to consider unique linguistic characteristics of these languages. Such characteristics could be orthographic depth, syllable structure discussed earlier or aspects concerning tone and other prosodic features. This is a concern as so many transparent orthographies dominate the African continent and it is a concern that current research in Africa ought to address. Getting the strategies right for literacy learning and instruction for specific transparent orthographies would likely lead to improvement of literacy outcomes for indigenous languages.

In Namibia, reading and writing instruction started with the missionaries. Based on an oral interview with P. Hasheela (personal communication, April 26, 2019), reading instruction during his times, that is, in the 1950s to 1970s, was based on letter names only and not sounds. Children were taught names of letters of the alphabet and a consonant and a vowel were put together as follows: 'm' (letter name 'me') and 'e' is '*me*'; 'm' (letter name 'me') and 'e' is '*me'*. The two syllables would then be put together as follows: *me* + *me* to form the word *'meme'* (mother).

Hasheela's readers for Grade 1 also show a similar progression, although the concept phonics only found its way in Namibian classrooms in recent years. The Namibian curriculum prescribes phonics teaching in Grades 1–3, in both first languages (mostly Mother tongues) as well as in English taken as a first or second language. In the Oshikwanyama first language syllabus, learners are expected to

recognize letter names and letter sounds as well as to count syllables in simple words (Ministry of Education, 2014).

Cook and Basetti (2005) suggest that strategies focused on letter-phoneme conversion and syllables are more suitable to use in the teaching and learning of transparent orthographies than those focused on whole word recognition or morpheme recognition. Auditory phoneme recognition, syllable recognition, tone and vowel length awareness are some of the key aspects to include in early literacy instruction of transparent languages. Morphemic awareness and phonological rules are necessary later to teach spelling rules (Trudell & Schroeder, 2006). They further suggest that, because many Bantu languages consist of long words, they should be practised using syllables.

3 THE AIMS OF THE THESIS

The general aim of the thesis was to describe how children learn to read and spell in Oshikwanyama language, the processes they go through as they learn and develop reading and spelling skills, the dynamics involved as well as what teachers know about reading and its instruction. As stated in the background of the study, not much is known about how Namibian indigenous languages are acquired and learnt. Literacy learning is a critical challenge in Namibian schools at the moment as children do not achieve expected reading outcomes at Junior Primary phase. Teachers, educators and the education sector at large are, therefore, on a constant look-out for solutions to address the situation. In light of indigenous languages, this situation ignited curiosity why children struggle to learn to read and spell a language that has transparent orthography and ought to be easy to learn. In order to develop teacher training and literacy instruction, there is a strong need to study how literacy skills develop in early school years, especially in indigenous languages. With regards to teachers, it was necessary to find out where the gaps are, regarding what they know about what constitutes reading and what type of support would be needed for them. This could help to develop teacher training curricula and also capacitate teachers who are already teaching in the schools. The empirical section of this dissertation is presented in two parts as follows:

PART I: Children's literacy skills development from Grade 1 to Grade 2

The aim of the first part of the thesis was to investigate the antecedents of reading and spelling skills in Oshikwanyama language, in the first grade as well as to explore the developmental dynamics and pathways of children's reading and spelling skills from Grade 1 to Grade 2. The more specific research questions (RQ) were:

RQ1: To what extent do pre-literacy skills (phonemic awareness, letter knowledge, and rapid naming) at the beginning of Grade 1, predict the development of decoding and spelling skills in Oshikwanyama

language at the end of Grade 1?

RQ2: What are the developmental dynamics of children's reading and spelling skills during Grades 1 and 2?

PART II: Teacher knowledge on literacy instruction and language constructs

The aim of the second part of the thesis was to determine the Junior Primary school teachers' training and knowledge of literacy instruction in Oshikwanyama as well as knowledge of Oshikwanyama language constructs. The more specific research questions were:

RQ1: What is the Junior Primary school teachers' training in early literacy instruction of Oshikwanyama language?

RQ1.1 What are the differences in training among pre-service, in-service and experienced teachers, if any?

RQ2: What is the Junior Primary school teachers' knowledge of early literacy instruction of Oshikwanyama language and Oshikwanyama language phonological and morphological constructs?

RQ2.1 What are the differences in knowledge among pre-service, in-service and experienced teachers, if any?

RQ3: What is the relationship between qualification, training, experience and knowledge of early literacy instruction of teachers?

4 METHOD

The empirical part of the thesis is a quantitative correlational study that employed two research designs. Part I of the thesis followed children's literacy skills development longitudinally in a two-year data collection period. This part employed test data of children on different literacy measures. The researcher developed most of the tests herself, since no standardized reading and spelling assessment instruments were available in Oshikwanyama language. However, the Namibian EGRA pilot assessments of Oshikwanyama language formed a good basis for developing the reading assessments. Data was also collected by the researcher with research assistants that she trained. Part II of the thesis is cross-sectional research that was conducted the following year after the children's data collection period. It consists of survey data of teachers. The teachers' data was also collected by the researcher herself, with the help of research assistants. Figure 2 shows the longitudinal design of the thesis, and Table 4 summarises the methods and data used in the present thesis.

4.1 Participants and procedure

4.1.1 Participants and procedure in PART I

The study was conducted from 2015 to 2017 in northern Namibia. The five schools selected were from five different school clusters from Ohangwena Educational Region. One school was selected from each cluster. Letters of request for permission to participate in research were similarly written to the Directorate of Ohangwena Educational Region as well as the principals of the participating schools. Permission to conduct and participate in research was granted by both. School sizes ranged from 485 to 657 learners. The selected schools are located in communities of similar socio-economic status (SES), educational infrastructure as well as general environmental setting. Except for one school, they can all be

regarded as founding schools in the region, dating back to the 70s. The schools were selected by the researcher on the basis of the above characteristics as well as the fact that they represented the five largest school clusters in the Ohangwena Educational region. All five schools selected, offered Oshikwanyama language as a medium of instruction and as a first language subject at Junior Primary phase. The total number of classrooms was 12. There were two to three Grade 1 classrooms per school. Teachers provided classlists of their classes from which the researcher chose the sample. Only children who were in Grade 1 for the first time and whose mother tongue was Oshikwanyama were included in the sample. Thirty (30) children were selected from each school using the random sampling procedure. Ten to fifteen children were included from each class group. Every third child from the list was selected to be part of the sample. However, care was taken in ensuring the equal amount of boys and girls that, the researcher alternated between the boy-girl class list as she picked the children in order to get a gender balance.

PART I of the study involved a sample of 150 children (76 girls and 74 boys). The mean age of children was 6.4 years (SD = 0.7). Most of the children were 6 years-old going to turn 7 years later that year. The school-entry age in Namibia is 7. About one third of the children (n = 53, 35.3%) had attended Pre-Primary, 34.0% (51 children) attended Kindergarten, while 30.7% (46 children) did not attend either pre-primary or kindergarten (No Pre-Primary attendance). Parental consent for participating children was sought before the commencement of research.

At the end of Grade 2, the sample of the children reduced to 126, the attrition rate being 16%. Attrition was mainly due to relocation of children to other schools. However, children who failed Grade 1, but were still at the same school still formed part of this sample.

Baseline measures of children's pre-literacy skills were conducted in 2015 at Grade 1 entry in the first week of February (Time 1), before children received any formal reading instruction. This was during the first five weeks of school readiness activities which is compulsory in the Namibian school curriculum. Towards the end of Grade 1 in the first week of October 2015 (Time 2), children's reading and spelling skills were tested. At the end of Grade 2 in October 2016 (Time 3), the same children were assessed by repeating the same measures and with some new measures (see Figure 1 and Table 4).

Assessments were done in a separate room provided by the schools. Children were called one by one from the classrooms to come and do the tests with a researcher or research assistant. Teachers were provided with the list of participating children and helped to send the children to the researcher in an orderly manner. When an assessment for a child was complete, the child was sent back to class to continue with learning and the next child was sent by the teacher.

The assessments lasted about 25-30 minutes per child, depending on the number of items covered per time point. All measures were conducted individ-

ually one-on-one with the children, except the spelling measure in Grade 2, which was done as a group assessment in the classroom.

4.1.2 Participants and procedure in PART II

Participants in the second part of the study were 153 Junior Primary school teachers (127 female and 25 male teachers, and one teacher who did not report his/her gender) who were either teaching at an Oshikwanyama medium of instruction school or training to be Junior Primary teachers for Oshikwanyama language medium. The study consisted of three types of teacher participants namely, Experienced and qualified teachers (n = 44; 28.76% of the teacher sample), In-service teachers (n = 34; 22.22%) and Pre-service teachers (n = 75; 49.02%). The Experienced and qualified teachers were those teachers who have been teaching for many years and they have a teaching qualification. In Namibia, the standard teaching qualification was the Basic Education Teacher's Diploma (BETD) until the past eight years when a Bachelor's degree for Primary school level was introduced in 2011. This was after all the teachers' colleges in Namibia merged with the University of Namibia in 2011.

The In-service teachers are those teachers who have been teaching at Junior Primary level, but they do not have a teaching qualification. Most of them might not have any tertiary qualification at all, after Grade 12, while some might have a qualification after Grade 12, but in a different field. Lately, it has been a norm in Namibia for graduates to find a teaching position, especially at Junior Primary level, if they fail to find a job in the field in which they studied. This is, of course, related to the misconception that anyone can teach, especially young children, regardless of whether they have been trained for teaching or not. It is because of this unusual situation that, the former Minister of Education mandated an inservice training programme for this group of teachers. The programme is offered at the University of Namibia's campuses of Junior Primary Education and it is referred to as the Diploma in Junior Primary Education (DJPE).

The Pre-service teachers' sample included student teachers at two of the University of Namibia's campuses. These students were in their final year of studies. This sample had two levels of students: those who were studying for the Bachelor of Education Degree in Pre- and Lower Primary (currently referred to as Junior Primary phase) and those who were studying for the Diploma in Junior Primary Education. The duration of the degree is four years, while the duration of the diploma is three years. Both programmes offer a bilingual model of Namibian Language and English Language Education as compulsory subjects for students. The sample consists only of student teachers who had Oshikwanyama as a Namibian language (Mother tongue).

Teachers were administered a comprehensive questionnaire gauging their knowledge of Oshikwanyama language constructs as well as their knowledge regarding literacy instruction concepts and strategies in Oshikwanyama language (see Figure 2 and Table 4). Data were collected during the period of July to October 2017. The Pre-service teacher group completed the questionnaire in

mid-October 2017, at the end of their final year of studies. Teachers were gathered in one room at their respective schools or university campus and paper questionnaires were handed out.

The questionnaire consisted of three main parts (see Appendix 4). The researcher went through the first section of the questionnaire and instructed the teachers on what was required and answered any questions they had. Except for Part 1, the questionnaire was exclusively written in Oshikwanyama language. Part 1 of the teacher questionnaire captured the biographical and training information of teachers. Part 2 assessed the teachers' knowledge of the phonological and morphological structure as well as concept knowledge of Oshikwanyama language constructs. Part 3 evaluated the teachers' knowledge of literacy instruction strategies as well as their own literacy instruction practices. The questionnaire took between 40 minutes to 1 hour to complete. Questionnaires were collected immediately when the participants had completed. This procedure was applied consistently to all teachers and schools/campuses. Most of the data collection was done immediately after school hours as the schools preferred it this way. Teachers were rewarded with a small gift after completing the questionnaire. Two mentors (one also an Advisory teacher for Junior Primary level in the region) and one facilitator for Junior Primary in the region were used to help the researcher with this part of data collection.

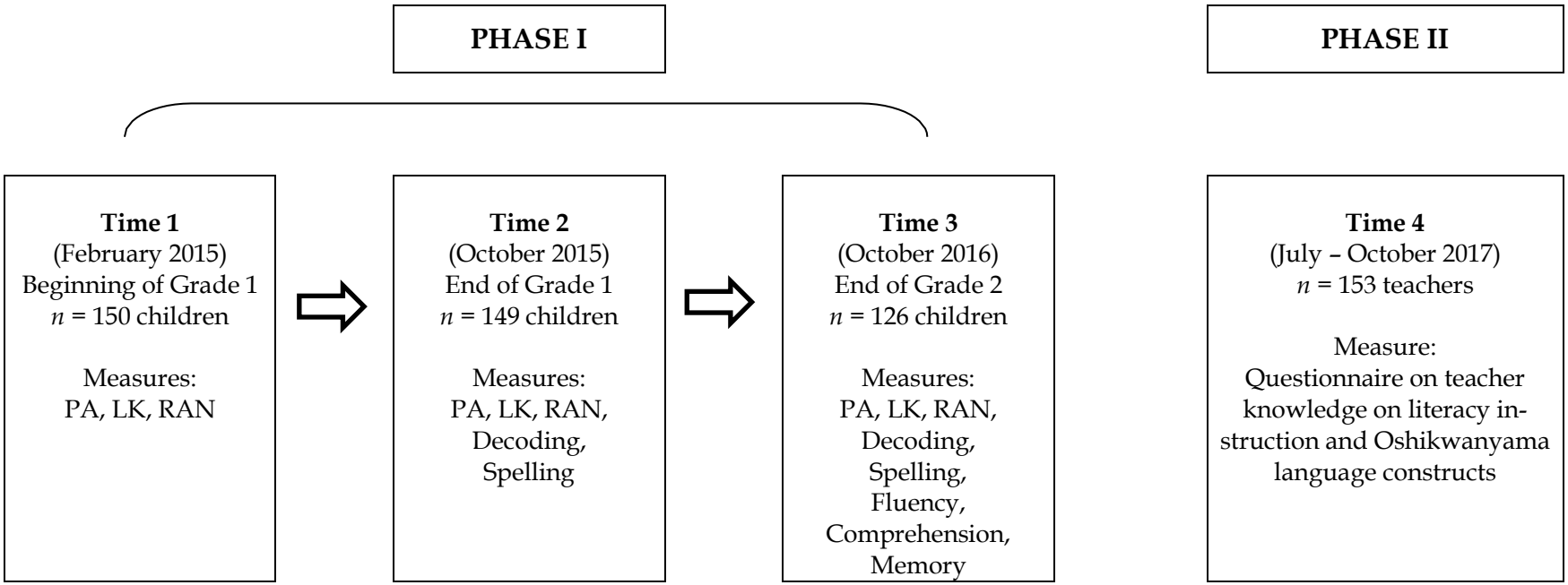


FIGURE 1 The design of the thesis

TABLE 4 Data and methods in the thesis

	PART I: **Children's literacy skills development** (Time 1, Time 2, and Time 3)	**PART II:** **Teacher knowledge on early literacy instruction and language constructs** (Time 4)
Main measures	Tests on pre-literacy skills on phonemic awareness, letterknowledge, RAN, decoding and spelling at Grade 1 Tests on phonemic awareness, letter knowledge, RAN, decoding, spelling, fluency, comprehension, and memory at Grade 2	Questionnaire on literacy concepts, strategies used for literacy instruction and on phonological and morphological structure of the Oshikwanyama language
Main statistical methods	Analyses using SPSS 23 & 24: Descriptive statistics and Spearman's correlations Analysis using MPlus Version 8 (Muthen & Muthen, 1998-2017): Path modelling of PA, LK, RAN at beginning of Grade 1 and decoding and spelling at end of Grade 1 Analyses using SPSS 24: Spearman's correlations among Grade 2 variables as well as between Grade 1 and 2 variables, and Crosstabulation of decoding and spelling development from Grade 1 to 2; Analysis using MPlus Version 8 (Muthen & Muthen, 1998–2017): Path analysis of reading and spelling variables at the end of Grade 1 and 2	Analyses using SPSS 24: Descriptive statistics and distributions of sum scores of different aspects of teacher knowledge Kruskal-Wallis H test and pairwise comparisons of different teacher groups Spearman's correlations between training and knowledge variables

4.2 Measures

In the present thesis, measures used to test children's pre-reading, reading and spelling skills were phonemic awareness (PA), letter knowledge (LK), Rapid Automatised Naming (RAN), word decoding, spelling, fluency, comprehension, short-term memory and working memory. Some measures were repeated at Grade 1 and Grade 2, while others were used only in the specific grade. Most of the measures were de- veloped by the researcher herself as no standardized reading and spelling assessment instruments were available in Oshikwanyama at the time of the data collection. For tasks such as phonemic awareness, the Namibian EGRA task was used as a guideline (NIED, 2013). In developing other measures, the researcher used instruments originally developed in the Finnish language as guidelines for constructing literacy assessment tasks. Tests developed in the Finnish language are a good starting point as it is also a transparent language (as is Oshikwanyama). Cronbach's alpha coefficients were computed to determine the reliability of the measures (see Appendix 5).

4.2.1 Children's Measures (PART I)

Phonemic awareness. An individually administered test of phonemic awareness at the beginning of Grade 1 (Time 1), at the end of Grade 1 (Time 2) and at the end of Grade 2 (Time 3) was based on the ideas presented in the EGRA task (NIED, 2013). The phonemic awareness task consisted of five items (see Appendix 3, Task 1). The items were high frequency words conforming to two basic word structures common in Oshikwanyama language, cvcv as in 'meme' (mother), '*tate*' (father), '*pedu*' (down) and vcv as in '*eta*' (bring), '*ame*' (I/me). Children were asked to identify initial sounds of words said aloud by the teacher. Number of correct sounds was recorded (maximum score was 5).

Letter knowledge. Children were asked to name 22 letters of the Oshikwanyama language alphabet shown by the researcher at the beginning of Grade 1 (Time 1), at the end of Grade 1 (Time 2) and at the end of Grade 2 (Time 3). Letters were marked on cards and placed in random order, in rows on a table (see Appendix 3, Task 2). Children were asked to point to the letters following in the rows and give either the name or sound of the letter. Both letter sounds and names were accepted- since the researcher noticed that children did not distinguish between the two. Both higher case and lower case letters were tested and scored separately. Due to the fact that there was no big difference in the children's knowledge of higher case and lower case letters, only the lower case letter score was used. The task score was the number of letters or sounds said correctly (maximum score was 22).

Rapid Automatised Naming. RAN was assessed at the beginning of Grade 1 (Time 1), at the end of Grade 1 (Time 2) and at the end of Grade 2 (Time 3) using the standard procedure (Denckla & Rudel, 1976) in which the child is asked to name as rapidly as possible, a pseudorandomly arranged series of 50 pictures of

five objects: *'otuwa'* (car), *'eumbo/ onduda'* (house/hut), *'oshi'* (fish), *'opena yekala/ opena'* (pencil/pen) and *'etanga'* (ball) (see Appendix 3, Task 3). The researcher did the adaptation of the objects in Oshikwanyama language. Adaptation was done to the object 'house' to resemble an Oshiwambo house/hut that the children were familiar with. Total matrix (five rows of ten) was 50. Completion time in seconds was used as the score.

Word Decoding. Decoding was assessed at the end of Grade 1 (Time 2), using five common words in the Oshikwanyama language on a word list. The test was similar to the Finnish word decoding task without time limit in ARMI test battery (Lerkkanen, Poikkeus, & Ketonen, 2006). Children were asked to read the words aloud. The words progressed from a one syllable to a five syllable word, increasing in length and complexity. The words were '*fa'* (look like/ dig), '*okwa*' (conjunction meaning someone did something, denoting past tense*);* '*etango*' (sun); *'okambishi*' (cat), *'omushamane'* (man) (see Appendix 3, Task 4). The score was the total number of words read correctly (maximum score was 5).

At the end of Grade 2 (Time 3) a list of 20 words in the Oshikwanyama language with varying morphological structure and increasing level of difficulty was used. The test was similar to the Finnish word decoding task without time limit in ARMI test battery (Lerkkanen et al., 2006). The list started with one-syllable words and ended with a seven syllable word, including all the other word structures in-between. Word structures ranged from cv, dv (digraph-vowel), vcv, vdv, dvcv, vcvdv, vdvcv, vvtvcv (vowel-vowel-trigraph-vowel-consonant-vowel as in *eenghaku,* shoes), vcvtvdvdv (*okanghwenyenye,* measles) (see Appendix 3, Task 7). The accuracy score was the total number of correctly read words. Total time taken to read the 20-word list was also recorded.

Spelling. Spelling was assessed at the end of Grade 1 (Time 2), using three words dictated in the Oshikwanyama language by the researcher. The test was similar to the Finnish word dictated task in ARMI test battery (Lerkkanen et al., 2006). The words consisted of the following structures: vcv, cvcv, vdvcv. The words were: '*eta*' (bring), '*kala*' (be /stay), '*ongobe*' (cow) (see Appendix 3, Task 5). The words were repeated three times, one word at a time, and the child wrote it down. The task score was the total number of words spelt correctly (maximum score was 3).

At the end of Grade 2 (Time 3) a 10-word list in the Oshikwanyama language of different morphological structure and increased level of difficulty was used as a spelling task. The words ranged from one-syllable words up to five syllable words, and both simple syllable structure and complex syllable structures were used (see Appendix 3, Task 8). The researcher repeated each word three times and the children wrote it down. This was the only group-administered task among the assessments.

Fluency. A text of 143 words about birds (*Oudila)* was used to assess reading fluency (speed and accuracy) at the end of Grade 2. The text was composed by the researcher and the text level was considered suitable for children in Grades 2 and 3 (see Appendix 3, Task 9). Children were instructed to read the text as fast as they could, and they were told to stop after one minute. The number of words

correctly read per minute was recorded. The test was similar to the Finnish text reading fluency task in ARMI test battery (Lerkkanen et al., 2006).

Comprehension. A 71 word text titled '*Odibo yaTatekulu'* (Grandfather's cane) was used at the end of Grade 2 to test children's comprehension. This text was also composed by the researcher herself. The text was given to the children to read aloud. After the children finished reading, the researcher asked them questions about the text. Five comprehension questions were asked, spanning different levels of thinking. Two questions were recall questions, one was about a meaning of a word used in the text, while two were inference-making questions (see Appendix 3, Task 10). The number of correct answers was the total score of the test (maximum score was 5).

Short-Term Memory and Working Memory. Memory was assessed at the end of Grade 2 (Time 3) using the Wechsler Intelligence Scales for Children WISC-III (Wechsler, 1991) Memory for Digit Span subtest with the standard assessment procedure (see Appendix 3, Task 6). Digits forward was used to measure short-term auditory memory and digits backward to measure child's ability to manipulate verbal information while in temporary storage. In the digits forward recall task, the child hears a sequence of digits and has to recall each sequence in the correct order measuring short-term memory. In the digits backward task, the child is required to recall a sequence of spoken digits in the reverse order measuring working-memory. Test trials begin with two numbers, and increase by one number in each block. Scores were the number of correctly-repeated number sequences (maximum score was 12 for digits forward and 12 for digits backward).

4.2.2 Teachers' Measures (PART II)

The study employed a comprehensive questionnaire on teachers' knowledge of Oshikwanyama language constructs and Oshikwanyama literacy instruction concepts (see Appendix 4). The questionnaire was constructed by the researcher specifically for this research, but it was based on Aro and Björn's (2015) as well as February's (2018) questionnaires on teacher knowledge. In the present thesis, items on education and training focused specifically on the training in Oshikwanyama language and its instruction: teaching experience in Junior Primary in years, qualification as well as items related to training at Junior Primary level, training in Oshikwanyama language teaching, training in reading instruction of Oshikwanyama language, training in writing instruction of Oshikwanyama language, training in phonics instruction of Oshikwanyama language as well as training in phonological awareness of Oshikwanyama language were focused on.

Background. Qualifications of the participants were asked with two questions. One question was about the highest qualification that the teacher had with the following options: Master's degree, Honours degree, Bachelor's degree, Diploma, Certificate, currently studying and none. The other question was about the name or title of qualification with the following options: Master of Education (M.Ed), Bachelor of Education (B.Ed) full-time or distance, Basic Education

Teacher Diploma (BETD) full-time or distance, Diploma in Junior Primary Education (DJPE) pre-service University of Namibia (UNAM), DJPE in-service (INSET), Diploma in Pre-Primary at Namibia College for Open Learning (NAMCOL), Diploma in Pre-Primary or Junior Primary at the Institute for Open Learning (IOL), Advanced Certificate in Education (ACE), Certificate in Education, and Other (see Appendix 4, Part 1, questions 11-12). These options are the most common education qualifications available for Namibian teachers in the country. The Bachelor of Education is the highest qualification among the listed qualifications. It is offered at the University of Namibia in four forms namely, Bachelor of Education (Pre-Primary and Lower Primary), Bachelor of Education (Upper Primary), Bachelor of Education (Secondary), Bachelor of Education (Lifelong learning and community education). All four degrees are at the honours level, level 8. The BETD was phased out in 2010. Most of the teachers who obtained the BETD upgraded with the ACE to be at the degree qualification level. The Diploma in Junior Primary Education (DJPE) pre-service and in-service are at the same level. These replaced the former BETD. The IOL diploma is offered by a private institution mostly done through an in-service mode. It is regarded at the same level as the DJPE because it is also a three-year diploma.

The *teacher training* items included whether teachers were trained to teach at Junior Primary level or not, the number of years for training, whether they were trained for Oshikwanyama language teaching and also whether they were trained for literacy instruction in Oshikwanyama. The instruction questions included reading instruction, writing instruction, phonics instruction as well as phonological awareness instruction (see Appendix 4, Part 1, questions 13–24). Most of the items were responded on a scale 0–1 (0 = no, 1 = yes) and for some items, the duration of training in a numerical value was required.

Teacher knowledge of Oshikwanyama language. Teachers' *knowledge of the phonological structure* of Oshikwanyama language were measured with three questions at phoneme level (for example, How many sounds are in the word '*kala*' (be, stay)?), four questions at syllable level (for example, How many syllables are in the word '*okanghwenyenye*' (measles)?), and two questions at digraph level (for example, 'This is an example of a digraph in Oshikwanyama. Circle the correct answer. (a) lp (b) th (c) nk (d) mh'). A sum score of the correct answers was computed separately for phoneme, syllable and digraph level knowledge (see Appendix 4, Part 2, questions 2–10).

Knowledge of the morphological structure of Oshikwanyama language were assessed with three items (for example, 'Show the prefix, stem and suffix in the word '*omumatilela*' (gentleman)'). Of these items, a sum score of the correct answers was computed separately for morphological level language (see Appendix 4, Part 2, questions 11–13). The questionnaire included four questions concerning reading related concepts: phonics, phonological awareness and semi-vowels (see Appendix 4, Part 2, questions 14–17). They were multiple-choice questions where teachers were asked to choose the correct definition of each concept. Each question included five response options. As an example, the question 'What is phonological awareness?' had the following choices: (a) the

ability to identify sounds written (b) the ability to break down and manipulate individual sounds in spoken language (c) a teaching method for decoding skill (d) it's the same as phonics, and (e) I don't know. A sum score of the correct answers was computed separately for literacy concepts knowledge.

Teachers' knowledge of literacy instruction strategies was examined using three multiple-choice items created by the researcher (see Appendix 4, questions 18–20). Each item described a certain kind of teaching method or strategy. Teachers were asked to identify the teaching method or strategy being described in the statement. The methods in the multiple choice were following: whole word/global method, language experience method, phonic method, story method, don't know. The strategies in the multiple choice were following: modelled reading, shared reading, guided reading, echo reading, don't know. Of these questions, a sum score of the correct answers was computed separately for teaching methods and strategies knowledge level.

4.2.3 Data analysis for PART I

First, descriptive statistics (means and standard deviations) were calculated for all measures and normality of the distributions of the measures was examined. Due to the fact that most of the measures did not conform to normality, non-parametric Spearman's correlations between measures were run between baseline measures and measures at the end of Grade 1, among measures at the end of Grade 2 as well as between measures at the end of Grade 1 and the end of Grade 2. These analyses were conducted using SPSS 24 statistical software.

In order to determine the predictive associations of phonemic awareness, letter knowledge and rapid automatised naming at the beginning of Grade 1 on decoding and spelling measures at the end of Grade 1 (see Part I: RQ1), path analysis in MPlus, Version 8 (Muthen & Muthen, 1998–2017) was performed.

In addition, crosstabulations with χ^2 test was used to determine the developmental dynamics of reading and spelling during Grade 1 and 2 (see Part I: RQ2). Crosstabulation was done among and between decoding and spelling measures at Grade 1 and 2. The grouping was done for decoding at Grade 1 as follows: 0–1 words, 2–3 words and 4–5 words. This grouping was logical for the less amount of words at Grade 1 phase. Decoding at Grade 2 was grouped using a cut-off point of 1 standard deviation below and above the mean. Accordingly, *Low level decoders* were defined by using the following cut-off point: *Mean of decoding at Grade 2 - 1 Standard deviation (SD) of decoding at Grade 2 = (14.35 - 6.28) = 8.07.* Thus, children who scored 8 or less were categorised as *Low level decoders*. In contrast, *High level decoders* were defined by using the following cut-off point: *Mean of decoding at Grade 2 + 1 SD of decoding at Grade 2 = (14.35 + 6.28) = 20.63*. The maximum score for decoding was 20 (see Table 6). Thus, the cut-off point for *High level decoders* was above the maximum. This was due to the ceiling effect in the decoding measure distribution. Hence, all those students who scored more than 8 were grouped into one and labelled as *Middle to High level decoders*.

Spelling at Grade 2 was also grouped using a cut-off point of 1 standard deviation below and above the mean. Accordingly, *Low level spellers* were defined

by using the following cut-off point: *Mean of spelling at Grade 2 – 1 SD of spelling at Grade 2* = (4.63 -2.13) = *2.50.* Thus, children who scored 3 or less were categorised as *Low level spellers.* In contrast, *High level spellers* were defined by using the following cut-off point: *Mean of spelling at Grade 2 + 1 SD of spelling at Grade 2* = (4.63 + 2.13) = *6.76.* Thus, children who scored 4–6 *Middle level spellers* and those who scored 7–8 as *High level spellers.* It should be noted that the maximum point scored in the spelling measure was 8 and not 10 which was the maximum score for spelling.

To bring everything together and determine predictive associations of decoding and spelling at the end of Grade 1 as independent variables and all measures tested at the end of Grade 2 as dependent variables, path analysis on MPlus Version 8 (Muthen & Muthen, 1998-2017) was performed.

4.2.4 Data analysis for PART II

In this part, teachers were sorted into three groups based on their education as follows: *Pre-service*, *In-service* and *Experienced* teachers. Descriptive statistics were also the starting point. Means, standard deviations and range were calculated for age and teaching experience of teachers, by teacher groups. Training of teachers and differences between the teacher groups in training aspects were examined using crosstabulation and X^2 test (see Part II: RQ1 & RQ1.1). Teacher type (groups) as an independent variable was analysed separately with different training aspects namely, trained at Junior Primary level, trained in Oshikwanyama language teaching, trained in reading instruction of Oshikwanyama language, trained in writing instruction for Oshikwanyama language, trained in phonics instruction for Oshikwanyama language, and trained in phonological awareness instruction for Oshikwanyama language, as dependent variables (see Table 10).

Means and standard deviations as well as medians were calculated for content tested regarding teacher knowledge of Oshikwanyama language of phonemes, syllables, digraphs (phonological knowledge), affixes (morphological knowledge) and literacy instruction concepts namely, phonics and phonological awareness. Means, standard deviations and median were also calculated for teaching methods and strategies concepts (see Part II: RQ2 & RQ 2.1).

Differences across teacher groups according to the different aspects of knowledge namely, phonological, morphological, literacy concepts knowledge as well as knowledge of teaching methods and strategies (see Part II: RQ2) was examined via Kruskal-Wallis H non-parametric test. Teacher type (groups) as an independent variable was analysed separately with different knowledge aspects, namely phonological knowledge, morphological knowledge, concepts knowledge and teaching methods and strategies knowledge as dependent variables (see Table 11). Post-hoc tests were also performed to find out which teacher groups were different and how. Bonferroni adjustment for multiple tests was applied to avoid Type I error. Finally, the relationship between training, experience and conceptual knowledge of teachers (see Part II: RQ3) were investigated with Spearman's correlations.

5 RESULTS

5.1 PART I: Children's literacy skills development from Grade 1 to Grade 2

5.1.1 Descriptive results for PART I

Table 5 shows descriptive results of children's pre-literacy, reading and spelling skills from the beginning of Grade 1 to the end of Grade 2. Children's *phonemic awareness* was quite low at the beginning of Grade 1 and did not seem to improve much at the end of Grade 2. The small standard deviation at the end of Grade 2 (*SD* = 1.35) also shows that most of the children scored rather similarly. Although there were those who got full scores in PA, there were still children who could not identify any initial sound correctly from the words spoken out by the researcher at the end of Grade 2.

Children's *letter knowledge* at the beginning of Grade 1 was very low too (Table 5). However, by the end of Grade 1, letter knowledge clearly increased. There was practically no improvement in children's mean letter knowledge from the end of Grade 1 to the end of Grade 2. Although the lowest initial score had improved from the beginning of the school by 5 letters, the variation in childrens' letter knowledge remained large during the follow-up, reflecting differences in children.

RAN speed of the children improved throughout the follow-up. The improvement was more notable during the first grade than from first grade to second grade.

Children's *word decoding* skills at the end of Grade 1 showed relatively large variation among the children (Table 5). Children's word decoding skills seemed to have improved from the end of Grade 1 to the end of Grade 2. Although it is not noticeable from the mean score of word decoding accuracy (*M* = 14.35), many children had quite good decoding skills at the end of Grade 2: more than one

third of the children (34.7%) could read 18 to 20 words at the end of Grade 2. However, there was large variation between children in reading accuracy (*SD* = 6.28) and there were still many children (13.3%) who could read only up to four words correctly. Children took, on average, 96.1 seconds to read the word decoding list of 20 words. It should be noted, however, that the standard deviation of time taken to read is extremely large (*SD* = 72.48). The fastest child took 28 seconds to read the word list, while the slowest child took 517 seconds.

TABLE 5 Descriptive results for PART I on children's literacy skills

Variable (max score)	***M***	***SD***	**Mini-mum**	**Maxi-mum**	**N**
Beginning of Grade 1					
1. Phonemic awareness (5)	1.63	2.01	0	5	149
2. Letter knowledge (22)	4.49	5.55	0	22	150
3. RAN (time in sec)	83.83	19.46	47	154	149
End of Grade 1					
4. Phonemic awareness (5)	1.93	1.61	0	5	149
5. Letter knowledge (22)	15.25	5.05	0	22	149
6. RAN (time in sec)	68.3	16.49	44	126	149
7. Decoding (5)	2.56	2.07	0	5	149
8. Spelling (3)	1.61	1.21	0	3	148
End of Grade 2					
9. Phonemic awareness (5)	2.37	1.35	0	5	124
10. Letter knowledge (22)	15.80	4.93	5	22	126
11. RAN (time in sec)	60.95	13.10	35	100	125
12. Decoding (accuracy) (20)	14.35	6.28	0	20	126
13. Decoding (time in sec)	96.51	72.48	28	517	126
14. Spelling (10)	4.63	2.12	0	8	120
15. Fluency (wcpm)[a]	24.26	12.87	0	62	123
16. Comprehension (5)	2.19	1.06	0	5	110
17. Memory: Forwards (12)	5.16	1.36	2	9	125
18. Memory:Backwards (12)	2.23	1.19	0	5	125

Note. [a] Fluency score was words correctly read per minute.

Children's *spelling* skills were quite low in the end of Grade 1. The frequencies showed that 30.25% of the children could not spell any word correctly. Children's spelling skills were still low at the end of Grade 2. As shown in Table 5, the mean score was slightly below average of the scale, with relatively large variation. There were some children (4.7%) who could still not spell any word correctly out of ten words. No child also scored all words correctly as the highest observed score was 8 out of 10 words.

At the end of Grade 2, low mean scores can also be seen in the fluency measure as the mean word correctly read per minute (wcpm) was 24.26 (Table 5). The standard deviation was quite large for this measure (*SD* = 12.87) which implies that there are many children whose wcpm was higher or lower than the

mean. The maximum score of 62 words per minute was also relatively low for reading fluency at the end of second grade in comparison to the international average reading speed for children in Grade 2, which is 72 wpm (Nowak, 2018).

The reading *comprehension* measure showed quite low scores too (Table 5), with some children scoring zero points on the task (5.3%). The majority of the children was not able to respond correctly to inference-making questions as well as giving the meaning of the word '*limbililwa*' (worried).

Scores on *memory* showed low means with very small standard deviations (Table 5). This implies that children had difficulties to remember a set of digits in the order the digits were said/spoken as well as in the reverse order. The number of the score in digit span backwards was lowest.

Table 6 shows Spearman's correlations between baseline measures at the beginning of Grade 1 and decoding and spelling skills at the end of Grade 1. There was positive correlation between the initial literacy tasks assessed at the beginning of Grade 1 and word decoding and spelling tasks assessed at the end of Grade 1. This means that the higher the initial literacy skills at the beginning of Grade 1, the better the decoding and spelling skills of the children at the end of Grade 1. It also means that the lower the children's initial literacy skills at the beginning of Grade 1 was, the lower the children's decoding and spelling skills were at the end of Grade 1. A negative correlation in relation to RAN results means that the higher the initial literacy skills the children had, the less time they took to name the objects, implying that they were faster. The results tend to show a slightly stronger correlation between the initial literacy skills (i.e. PA, letter knowledge, and RAN) and spelling, than their correlation with word decoding. However, this could be attributed to the fact that the number of items in the spelling measure was fewer. Correlation between decoding and spelling showed a strong positive association of .78. The high Spearman's correlation means that decoding and spelling measures give mostly the same information about the rank-order of the children: children who had low scores in decoding were mostly the same children who scored low in spelling. And children who had high scores in decoding also had high scores in spelling.

TABLE 6 Spearman's correlations of measures and measures at the end of Grade 1 (N=149)

Pre-literacy skills	Pre-literacy and literacy skills at the end of Grade 1				
	PA	LK	RAN	Decoding	Spelling
PA	0.21*	0.40**	-0.15	0.39**	0.45**
LK	0.21*	0.48**	-0.18	0.33**	0.40**
RAN	-0.09	-0.34**	-0.46**	-0.26**	-0.30**

Note. PA = Phonemic awareness; LK = Letter knowledge; RAN = Rapid Automatised Naming; *p < 0.05, **p < 0.01 (all 2-tailed)

Phonemic awareness at the beginning of Grade 1 correlated with letter knowledge at the end of Grade 1 somewhat more than letter knowledge at the beginning of Grade 1 correlated with phonemic awareness at the end of Grade 1 (see Table 6). The correlation of RAN of the children, with phonemic awareness was not statistically significant.

At Grade 2, correlations varied from weak to strong (see Table 7). The reading fluency correlated significantly with all measures. This implies that the higher the score in fluency, the higher the scores in phonemic awareness, letter knowledge, rapid naming, decoding, spelling and comprehension. Similarly, the lower the score in fluency, the lower the scores in phonemic awareness, letter knowledge, rapid naming, decoding, spelling and comprehension. Correlations were slightly stronger between word decoding and fluency (r = .58**) and spelling and fluency (r = .56**) than the rest of the measures. Word decoding and comprehension were not related. Spelling skill was, however, correlated to comprehension. In fact, spelling correlated to all measures, except with short-term memory digit span forwards. Short-term memory digit span forwards is one measure which did not correlate with many skills such as, letter knowledge, RAN, and spelling. However, short-term memory correlated with decoding accuracy. Short-term memory digit span forwards and working memory digit span backwards were not associated with each other.

Spearman's correlations between measures at the end of Grade 1 and end of Grade 2 also showed correlations among all measures (see Table 8). First, the higher the decoding score at Grade 1, the higher the decoding score at Grade 2; the lower the decoding score at Grade 1, the lower the decoding score at Grade 2. Similarly, the higher the spelling score at Grade 1, the higher the spelling score at Grade 2 and the lower the spelling score at Grade 1, the lower the spelling score at Grade 2. The exception was again the short-term memory forwards digit span measure which only correlated with decoding, fluency and comprehension skills.

TABLE 7 Spearman's correlations of measures at the end of Grade 2 (N = 126)

Measures	1	2	3	4	5	6	7	8	9	10
1. Phonemic Awareness	1									
2. Letter knowledge	.48**	1								
3. Rapid naming	-.23*	-.31**	1							
4. Short-term memory (Forwards)	.23*	.16	-.10	1						
5. Working memory (Backwards)	.31**	.42**	-.21*	.15	1					
6. Decoding (accuracy)	.22**	.36**	-.13	.21*	.19*	1				
7. Decoding time taken	-.33	-.44	.43*	-.14	-.33**	-.48**	1			
8. Spelling	.28**	.43**	-.24**	.17	.33**	.44**	-.50**	1		
9. Fluency (wpm)	.28**	.48**	-.44**	-.20*	.32**	.58**	-.87**	.56**	1	
10.Comprehension	.21*	.35**	-.38**	.23*	.19	.16	-.49**	.33**	.49**	1

Note. *$p < 0.05$, **$p < 0.01$ (all 2-tailed)

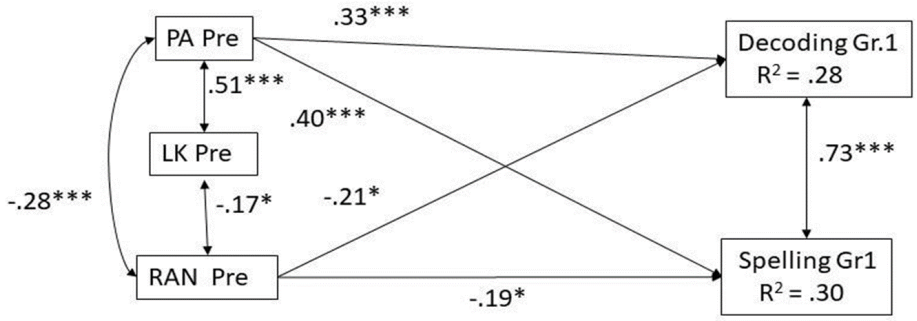
TABLE 8 Spearman's correlations of measures at the end of Grade 1 and end of Grade 2 ($N = 126$)

Measures	1	2	3	4	5	6	7	8
1. Decoding Gr. 1	1							
2. Spelling Gr. 1	.79**	1						
3. Decoding Gr. 2	.55**	.49**	1					
4. Spelling Gr. 2	.52**	.56**	.43**	1				
5. Short-term Memory (Forwards) Gr. 2	.17	.16	.21*	.17	1			
6. Working Memory (Backwards) Gr. 2	.29**	.32**	.19*	.33**	.15	1		
7. Fluency Gr. 2	.61**	.55**	.58**	.56**	.20*	.32**	1	
8. Comprehension Gr. 2	.37**	.39**	.16	.33**	.23*	.18	.49**	1

Note. *$p < 0.05$, **$p < 0.01$ (all 2-tailed).

5.1.2 Predictive associations of pre-reading skills with decoding and spelling

The first research question was to examine to what extent pre-literacy skills namely, phonemic awareness, letter knowledge, and rapid naming at the beginning of school, predict the development of reading (decoding) and spelling skills in Oshikwanyama language at the end of Grade 1. The results of path analysis (see Figure 2) showed that phonemic awareness at the beginning of Grade 1 positively predicted both decoding and spelling at the end of Grade 1. This implies that the higher the phonemic awareness skills children had at the beginning of Grade 1, the better they could read and spell at the end of Grade 1 and vice versa. RAN also predicted decoding and spelling at the end of Grade 1 too. The negative value in relation to RAN denotes that the faster children name the objects, the better their decoding and spelling skills. Letter knowledge did not predict either of the outcomes directly. However, it correlated positively with phonemic awareness and negatively with RAN. The association of letter knowledge seemed to be stronger with phonemic awareness than RAN. Thus, it seems that letter knowledge at the beginning of Grade 1 might be indirectly associated with both decoding and spelling, through phonemic awareness. Decoding and spelling had the strongest covariance of



Note. *p < 0.05, ***p < 0.001; PA= Phonemic Awareness, LK = Letter Knowledge, RAN= Rapid Automatised Naming

FIGURE 2 The path model at Grade 1 with standardized estimates

5.1.3 Developmental dynamics of reading and spelling skills

The second research question of PART I was to explore the developmental dynamics and pathways of children's reading and spelling skills during Grades 1 and 2. Figure 3 summarises the results of the dynamics of decoding development of children from the end of Grade 1 to the end of Grade 2.

At the end of Grade 1, results revealed that most children belonged either in the group of *0–1 words (Low level decoders)* (44.4%) or in the group of *4–5 words* (*High level decoders)* (45.2%) (Figure 3). Children who were in the *2–3 words group (Middle level decoders)* were a mere 10.3%. At Grade 2, the number of children in the *Low level of decoding* had reduced to 18.3% while 81.7% of children belonged to the *Middle or High level decoders* subgroup. Results from crosstabulations further showed movement of children's decoding skills development from Grade 1 to Grade 2. About one third (33.9%) of children who were in the *Low level decoders* subgroup at the end of Grade 1 were still in the *Low level decoders* subgroup at the end of Grade 2 and 82.6% of children who were reading at the low level at Grade 2 were those who were already in the low decoding level at Grade 1. However, two thirds of the children (66.1%) who were in the *Low level decoders subgroup* at the end of Grade 1 had moved to the *Middle and High level decoders* subgroup at the end of Grade 2, showing improvement in the development of word decoding skills. The majority of children who were in the high level of decoding at the end of Grade 1 (96.5%) belonged to the *Middle and High level decoders* subgroup at the end of Grade 2. Only two children (3.5%) dropped from the *High level decoders group* at Grade 1 to the *low level* in Grade 2.

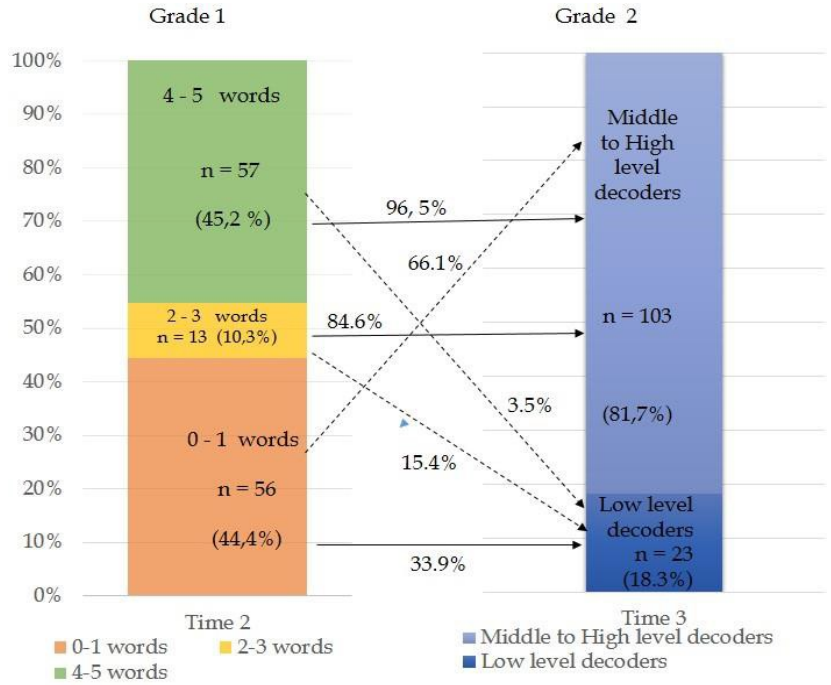


FIGURE 3 Trajectories of decoding skill from the end of Grade 1 to the end of Grade 2 (*N* = 126)

Figure 4 shows the results of the dynamics of spelling development of children from the end of Grade 1 to the end of Grade 2. Half of the children who were in the *Low level spellers* subgroup at Time point 2, that is, the end of Grade 1 were still in the *Low level spellers* subgroup at the end of Grade 2, while more than one-third had moved to the *Middle level spellers* subgroup and almost one-tenth had

actually moved to the *High level spellers* subgroup. The results further show that the majority of the children who were *Low level spellers* at the end of Grade 2 were those who were already *Low level spellers* at Grade 1. This shows that some children had persistent spelling problems from Grade 1 to Grade 2. The majority of the children who were in the *Middle level spellers* subgroup at the end of Grade 1 remained in the same level at Grade 2, while half of the children who were in the *High level spellers* group at the end of Grade 1 were in the *Middle level spellers* group at Grade 2. There was also one child who was in the *High level spellers* subgroup in Grade 1, but belonged to the *Low level spellers* group in Grade 2, while close to half of the children maintained their highest level spelling skills. This could be due to the fact that there were fewer items in Grade 1 with only one word discerning between the groups.

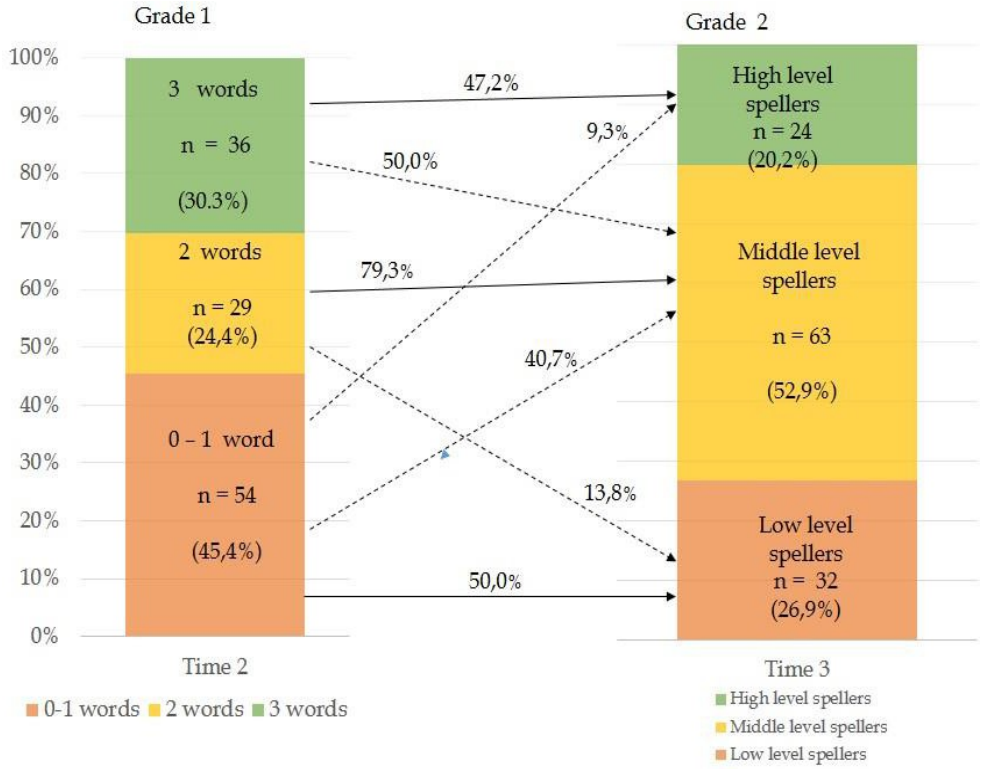


FIGURE 4 Trajectories of spelling from the end of Grade 1 to the end of Grade 2 (*N* = 119)

Looking at the dynamics of decoding and spelling skills within Grade 2 alone (see Figure 5), the results show that over three quarters of children in the *Low level decoders* subgroup were also in the *Low level spellers* subgroup, while 50% of those who were in the *Low level spellers* subgroup were also in the *Low level decoders* subgroup. Regarding good decoding and spelling skills, results show that less than one quarter of children who were in the *Middle to High level decoders* subgroup were also in the *High level spellers* subgroup, while almost all children who had high level spelling skills also had middle to high level decoding skills.

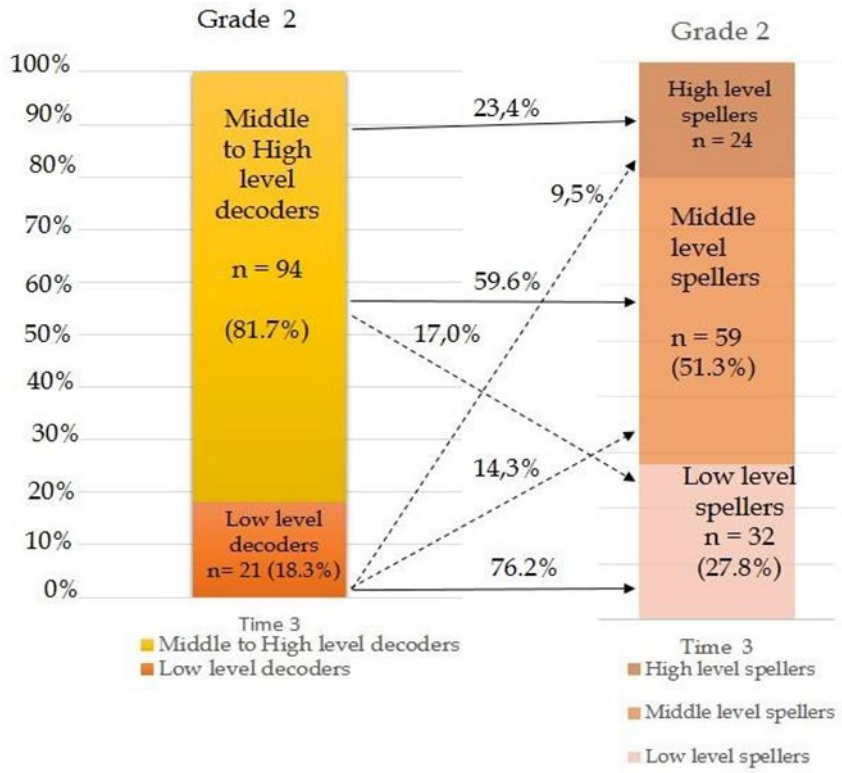


FIGURE 5 Dynamics of decoding and spelling at Grade 2 (*N* = 115)

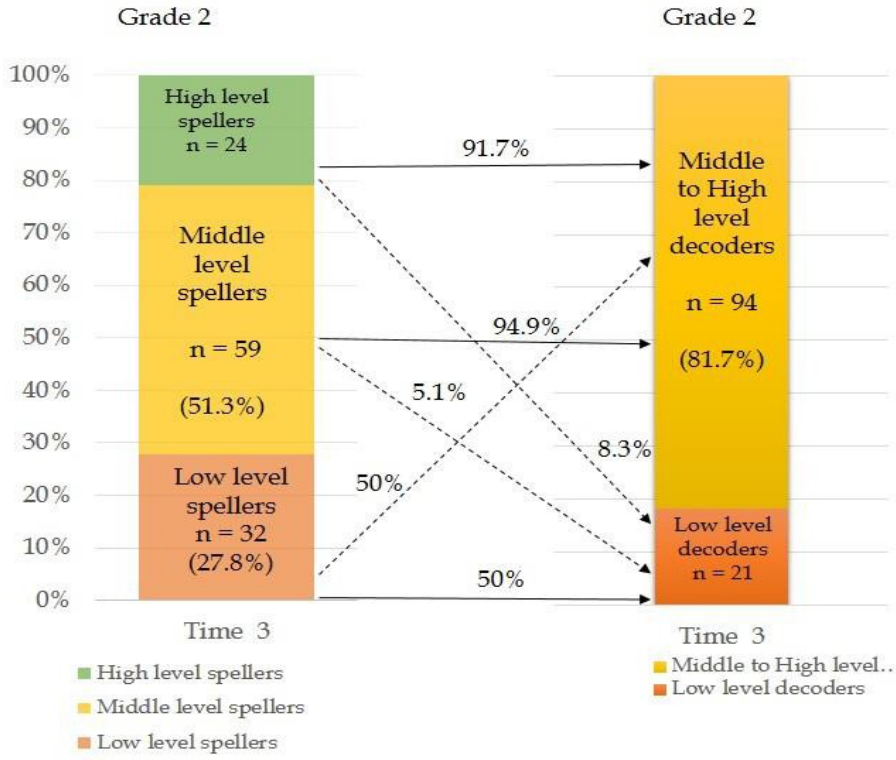


FIGURE 6 Dynamics of decoding and spelling at Grade 2 (*N* = 115)

Individual development of the children's decoding and spelling skills from end of Grade 1 and end of Grade 2 were further analysed. Individual paths of children show that most of the children's decoding skills improved from the end of Grade 1 to the end of Grade 2 (see Figure 7). The decline happened with few children. As an example, two children could read all five words which consisted of different word structures and length at the end of Grade 1, but could read only about 1-2 words at the end of Grade 2. Except for these two children (1.7%), the rest of the children who could read all five words at the end of Grade 1 could read 15 to 20 words at the end of Grade 2. This indicates that, once the child had cracked the code of decoding by the end of Grade 1, there was very little chance to lose that ability. These results are in agreement with results from crosstabulations.

Spelling development of individual children presented in Figure 8 shows that if a child could not spell any word at the end of Grade 1, there was still a good chance (50% chance) that he/she would still be able to spell some 4–7 words by the end of Grade 2. It shows also that if a child could spell all words at the end of Grade 1, there was at least still more than 10% chance that he/she would not still be a good speller at the end of Grade 2. However, overall, children seem to have improved in their spelling skills from Grade 1 to Grade 2.

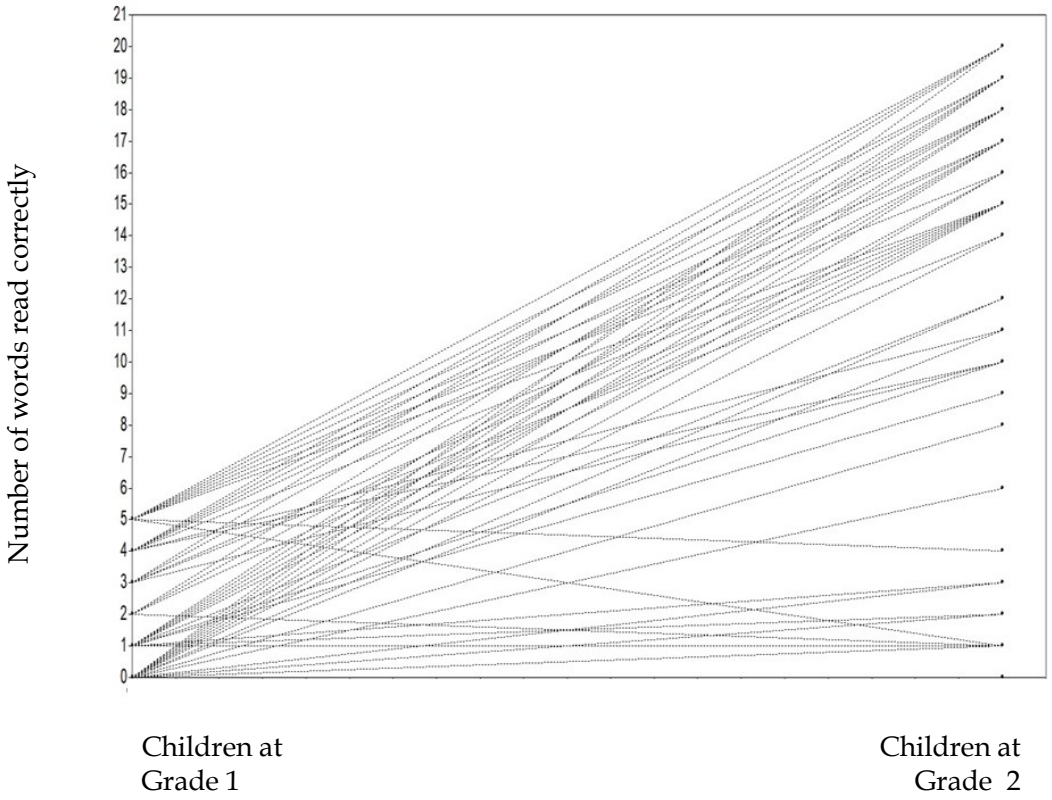


FIGURE 7 Individual development of children's decoding from end of Grade 1 to end of Grade 2 (N = 126)

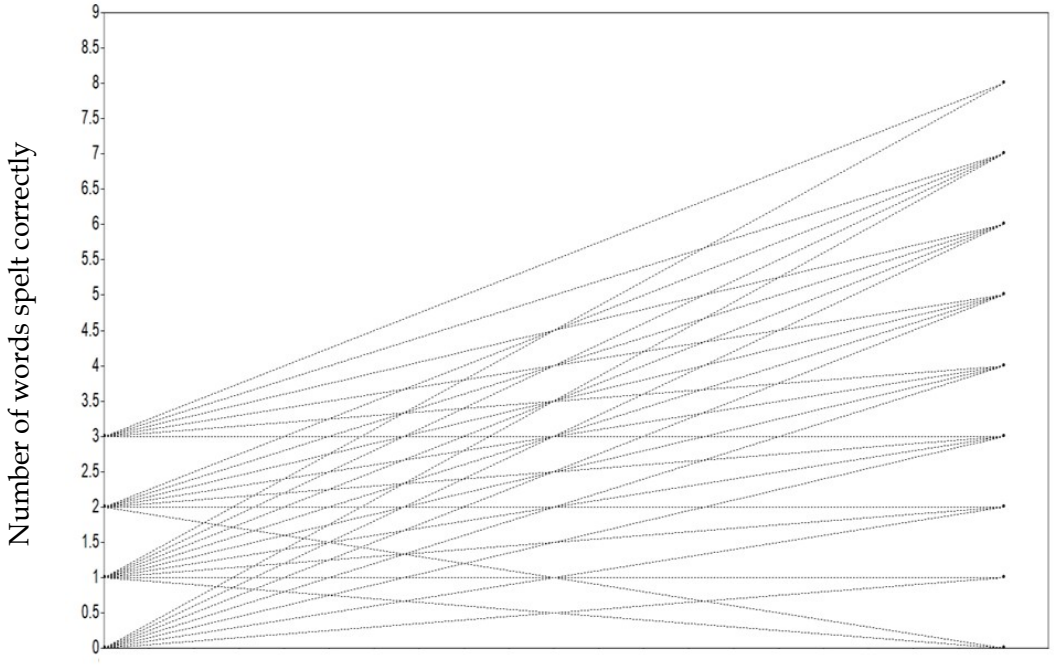


FIGURE 8 Individual development of children's spelling from end of Grade 1 to end of Grade 2 (N = 119)

To examine whether decoding and spelling at the end of Grade 1 predicted decoding, spelling, fluency and comprehension at end of Grade 2, a path model was tested (see Figure 9). Results indicate that decoding at Grade 1 positively predicted only decoding, spelling, and fluency at Grade 2. In contrast, spelling in Grade 1 positively predicted all measures at Grade 2 namely, decoding, spelling, working memory (backwards), fluency and comprehension. These results mean that the higher the decoding skills at Grade 1, the higher the decoding, spelling and fluency skills at Grade 2. Similarly, the lower the decoding skills at Grade 1, the lower the decoding, spelling and fluency skills at Grade 2. With regards to spelling, the results imply that, the higher the spelling skills at Grade 1, the higher the decoding, spelling, working memory, fluency and comprehension skills at Grade 2. In contrast, the lower the spelling skills at Grade 1, the lower the decoding, spelling, working memory (backwards), fluency and comprehension skills at Grade 2.

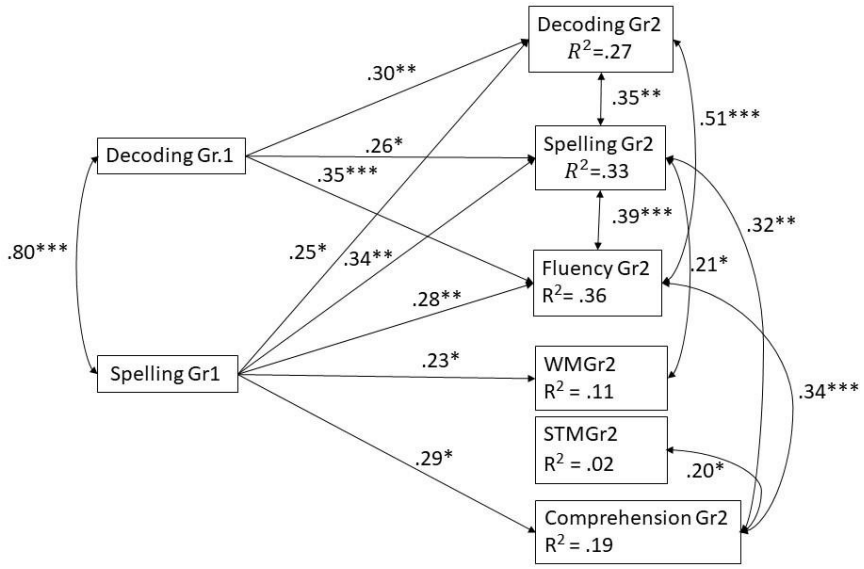


FIGURE 9 Path model for variables at the end of Grade 1 and the end of Grade 2 with standardized estimates, Note. *p < 0.05, **p < 0.01, ***p < 0.001

Differences in Pre-Primary attendance, gender, age and schools. The study found differences in Pre-Primary attendance, gender, age, and schools both at the end of Grade 1 and end of Grade 2. Table 9 shows children's skills according to Pre-Primary attendance. At the end of Grade 1, regarding Pre-Primary attendance, differences based on Kruskal-Wallis' test were found in phonemic awareness, letter knowledge, decoding and spelling. No differences were found in RAN. Pairwise comparisons showed that the differences were only significant between the No Pre-Primary with the Kindergarten group and the No Pre-Primary with the Pre-Primary group. Children who attended Pre-Primary had better phonemic awareness and letter knowledge than children who attended Kindergarten and those who did not attend Pre-Primary or Kindergarten. There were no differences between children who attended Kindergarten and those who did not attend anything.

TABLE 9 Differences in pre-literacy and literacy skills by Pre-Primary attendance

No Pre-Primary/ Kindergarten				Kindergarten			Pre-Primary			
	M	*SD*	*Md*	*M*	*SD*	*Md*	*M*	*SD*	*Md*	X^2 (2)
PA[1 beginning]	1.13	1.80	0	1.27	1.80	0	2.45	2.17	3	12.77**
LK[1 beginning]	2.37	3.31	1	4.84	5.42	3	5.98	6.66	4	11.48**
RAN[1 beginning]	82.93	19.74	81	86.27	20.94	84	82.23	17.80	80.50	.84
Decoding[1 end]	2.35	2.00	2.00	2.18	2.05	1.50	3.11	2.09	4	6.30*
Spelling[1 end]	1.57	1.17	2	1.31	1.18	1	1.92	1.24	2	7.04
PA[2]	2.60	1.50	2	2.29	1.31	2	2.24	1.27	2	2.01
LK[2]	14.46	4.65	16	16.62	4.36	18	14.33	5.41	16	5.93
RAN[2]	59.54	13.17	56	61.82	13.54	60	61.49	12.86	59	.59
Decoding[2]	12.93	7.48	16	13.89	6.30	16.50	15.96	4.71	17	3.02
Spelling[2]	4.37	2.43	5	4.50	2.09	4	4.98	1.86	5	1.10
STM[2]	4.88	1.17	5	4.87	1.20	5	5.67	1.54	6	8.16*
WM[2]	2.00	1.30	2	2.38	1.02	2	2.31	1.24	2	2.82
Fluency[2]	22.22	12.60	24	22.76	14.27	22	27.36	11.53	27	4.30
Comprehension[2]	2.03	1.22	2	2.28	.96	2	2.26	1.00	2	1.23

Note: *p = .05, **p < .01, [1] Grade 1; [2] the end of Gade 2; PA = phonemic awareness; LK = letter knowledge; RAN = rapid automatised naming; STM = short-term memory (forwards); WM = working memory (backwards)

Results further showed differences in decoding, among children who attended or did not attend either Pre-Primary or Kindergarten (Table 9). Children who attended Pre-Primary had better decoding skills than children who attended kindergarten or those who did not attend either. There were no differences between those who attended Kindergarten and those who did not attend either. With regards to spelling, the results revealed that children who attended Pre-Primary were better spellers than children who attended Kindergarten and those who did not.

At the end of Grade 2, differences were found in letter knowledge and short-term memory, among children who attended or did not attend either Pre-Primary or Kindergarten (Table 9). Children who attended Pre-Primary had better short-term memory than children who attended Kindergarten or did not attend either. No differences were found in children's phonemic awareness, letter knowledge, RAN, decoding, spelling, fluency and comprehension at the end of Grade 2.

Table 10 shows differences in children's skills by gender. Differences were only found in RAN at the beginning of Grade 1 and fluency at the end of Grade 2. Results showed that boys were faster in RAN at the beginning of Grade 1, while girls were faster in fluency at the end of Grade 2. No differences were found between boys and girls in phonemic awareness, letter knowledge, decoding, spelling, short-term memory (forwards), working memory (backwards) and comprehension either at the beginning of Grade 1 or end of Grade 2. There were also no differences in boys and girls' rapid naming skills at the end of Grade 2.

TABLE 10 Differences in pre-literacy and literacy skills by gender of the child at Grade 1 and Grade 2

	Boys			Girls			
	M	*SD*	*Md*	*M*	*SD*	*Md*	X^2 (1)
PA[1 beginning]	1.53	2.08	0	1.72	1.96	0.50	0.66
LK[1 beginning]	4.57	5.48	3	4.41	5.67	2	-0.24
RAN[1 beginning]	87.88	19.72	86	79.84	18.49	75	-2.77*
Decoding[1 end]	2.59	2.01	3	2.54	2.16	2.50	-0.12
Spelling[1 end]	1.67	1.20	2	1.55	1.24	2	-0.47
PA[2]	2.31	1.29	2	2.43	1.43	2	0.52
LK[2]	14.50	4.90	16	15.64	4.94	17	1.75
RAN[2]	61.18	13.78	57.50	60.73	12.52	57	-0.14
Decoding[2]	14.38	5.9	17	14.32	6.64	17	0.63
Spelling[2]	4.57	2.04	5	4.70	2.22	5	0.55
STM (Forwards) [2]	4.94	1.25	5	5.38	1.44	5	1.86
WM (Backwards) [2]	2.24	1.18	2	2.22	1.22	2	-0.03
Fluency[2]	21.80	9.61	24	26.60	15.06	28	2.17*
Comprehension[2]	2.16	1.20	2	2.22	0.90	2	0.31

Note: *p = .05; 1 Grade 1; 2 the end of Gade 2; PA = phonemic awareness; LK = letter knowledge; RAN = rapid automatised naming; STM = short-term memory (forwards); WM = working memory (backwards)

Differences were also found among children, with regards to age of the child, as shown in Table 11. Results showed that there were differences in children's phonemic awareness, letter knowledge and RAN at the beginning of Grade 1. The differences in phonemic awareness and letter knowledge were found between 6 and 7-year-olds. Children who were 7 years old had better phonemic awareness and letter knowledge than children who were 6 years old. No differences were found between 6-year-olds and 8-year-olds or 7-year-olds and 8-year-olds. With regards to RAN at the beginning of Grade 1, differences were found between 7 and 8-year-olds. Eight-year-olds had better rapid naming skills than 7-year-olds. Results further showed differences in decoding and spelling at the end of Grade 1 with regards to children's age. Children who were 7 years old had better decoding and spelling skills than children who were six or eight years old. At the end of Grade 2, results also revealed differences in decoding, fluency, comprehension and short-term memory (forwards). Similarly, children who were 7 years old had better decoding, fluency, comprehension and short-term memory skills than children who were 6 and 8. No differences were found in children's phonemic awareness, letter knowledge, RAN, spelling as well as working memory (backwards) at the end of Grade 2

TABLE 11 Differences in pre-literacy and literacy skills by age of child at Grade 1 and Grade 2

	6 years			7 years			8 years			
	M	*SD*	*Md*	*M*	*SD*	*Md*	*M*	*SD*	*Md*	X^2 (2)
PA[1 beginning]	1.28	1.86	0	2.33	2.15	2	2.33	2.52	2	21.43***
LK[1 beginning]	3.42	4.98	2	6.55	6.08	5	8.67	7.51	9	15.87***
RAN[1 beginning]	84.85	19.69	83	80.85	18.35	80	109.00	9.00	109	6.12*
Decoding[1 end]	2.37	2.03	2	3.09	2.09	4	0.67	0.58	1	6.19*
Spelling[1 end]	1.48	1.16	2	1.96	1.25	3	0.33	0.58	0	9.04*
PA[2]	2.38	1.36	2	2.39	1.37	2	1.00	1.41	1	1.94
LK[2]	14.76	5.02	17	15.53	4.92	17	17.00	2.82	17	0.77
RAN[2]	61.14	12.80	58	61.08	14.17	58	59.50	14.85	59.50	0.05
Decoding[2]	13.46	6.56	16	16.64	4.97	18	10.50	2.12	10.50	11.04**
Spelling[2]	4.46	2.15	5	4.97	2.05	5	3.00	1.41	3	2.88
STM Forwards[2]	4.96	1.37	5	5.61	1.31	5				8.25*
WM Bacwards[2]	2.22	1.17	2	2.26	1.25	2	2.50	0.71	2.5	0.35
Fluency[2]	22.29	12.08	23.50	28.39	13.12	27				6.97*
Comprehension[2]	2.05	1.03	2	2.55	1.03	2	1.00	1.41	1	7.29*

Note: *p = .05, **p < .01, ***p < .001; 1 Grade 1; 2 the end of Gade 2; PA = phonemic awareness; LK = letter knowledge; RAN = rapid automatised naming; STM = short-term memory (forwards); WM = working memory (backwards)

Table 12 shows differences in children's pre-literacy and literacy skills among the five schools. Differences were found in letter knowledge at the beginning of Grade 1 between School B and School D as well as between School C and School D. Children from school D had better letter knowledge than children from the rest of the schools in the sample. At the end of Grade 1, differences were also found in children's decoding and spelling skills. The differences in decoding were between School A and B, School B and C, School E and A, School E and C as well as School D and C. Children from School C had better decoding skills than children from the rest of the schools. With regards to spelling skills, differences were found between School E and School C. Similarly, children from School C had better spelling skills than children from the rest of the schools. At the end of Grade 2, differences among schools were found in phonemic awareness, letter knowledge and spelling. In phonemic awareness, differences were found only between School A and School C. Children from School A had better phonemic awareness than children from the rest of the schools in the sample. With regards to letter knowledge, differences were also found between School E and School D, School E and School A, School A and School B as well as School A and School C. Similarly, children from School A had better letter knowledge than children from the other schools. Lastly, with regards to spelling at the end of Grade 2, differences were found between School E & School C. As it was at the end of Grade 1, children from School C had better spelling skills than children from other schools in the sample when it comes to spelling skills.

TABLE 12 Differences in pre-literacy and literacy skills by School at Grade 1 and Grade 2

	School A			School B			School C			School D			School E			
	M	SD	Md	M	SD	Md	M	SD	Md	M	SD	Md	M	SD	Md	X^2 (4)
PA[1]	2.00	2.19	1	0.80	1.63	0	1.97	1.99	1.5	1.83	2.17	0	1.57	1.94	0	7.93
LK[1]	5.30	5.52	4.5	1.67	1.77	1	2.9	2.87	3	9.40	8.31	6.5	3.17	3.08	2	20.04**
RAN[1]	84.40	21.43	83	81.28	16.85	81	85.87	85.87	81.50	85.83	17.14	86	81.70	20.57	77	1.64
Decode[1]	3.43	1.89	4	1.57	1.48	1	3.93	1.80	5	2.00	2.09	1	1.87	2.06	1	31.02***
Spelling[1]	1.77	1.14	2	1.43	1.10	2	2.20	1.13	3	1.32	1.28	1	1.30	1.26	1	11.96*
PA[2]	3.25	1.55	3	2.77	1.42	2.5	1.92	1.41	2	2.16	0.99	2	1.96	1.02	2	15.80**
LK[2]	18.90	2.05	19	14.50	4.21	16	14.08	5.28	15	16.59	4.14	18	12.26	5.45	10	24.28***
RAN[2]	57.75	11.98	54.50	61.58	11.05	60.50	61.31	15.34	57	58.88	12.89	56.50	64.37	13.65	63	4.28
Decode[2]	15.14	5.26	17	13.19	6.88	16	16.77	4.69	18	14.35	5.91	16	12.52	7.56	16	7.36
Spelling[2]	5.20	1.88	6	4.40	2.18	5	5.52	2.02	6	4.77	1.90	5	3.50	2.16	4	14.17**
STM[2]	4.68	1.16	5	4.88	1.37	5	5.08	1.20	5	5.15	1.20	5	5.85	1.61	6	8.37
WM[2]	2.53	0.70	2	2.27	1.12	2	2.00	1.39	2	2.44	1.22	2	2.00	1.33	2	3.88
Fluency[2]	26.84	12.40	26	22.12	10.55	25	28.69	10.95	28	25.58	14.74	27.50	18.77	13.65	16.50	9.24
Comprehend[2]	2.37	1.07	2	2.00	1.12	2	2.21	1.14	2.00	2.43	1.12	2	1.95	0.78	2	4.30

Note: *p = .05, **p < .01, ***p < .001; 1 represents Grade 1; 2 represents the end of Grade 2; PA = phonemic awareness; LK = letter knowledge; RAN automatised naming; Decode = decoding; Spell = spelling; STM = short-term memory (forwards); WM = working memory (backwards); Comprehend = comprehension

5.2 PART II: Teacher knowledge on literacy instruction and Oshikwanyama language

5.2.1 Teachers' age, experience, qualification and training

Table 13 displays means and standard deviations of the age and teaching experience of teachers. The results indicated that there is a slightly bigger range between *experienced teachers'* age and *pre-service teachers'* age than between *experienced teachers* and *in-service teachers*. The range between *pre-service* and *in-service teacher* groups was the smallest. Similarly, the results show that experienced teachers had close to 20 years of teaching experience while preservice teachers had less than one year of experience.

TABLE 13 Descriptive results for teachers' age and teaching experience by teacher groups (N = 153)

Variable	*N*	*M*	*SD*	Min.	Max.	Range
Age (yrs)						
Pre-service	75	23.54	3.43	20	40	20
In-service	34	30.00	6.09	24	52	28
Experienced	44	48.17	9.94	24	59	35
Teaching experience (yrs)						
Pre-service	75	0.49	1.11	0	5	5
In-service	34	3.41	1.13	2	7	5
Experienced	44	19.17	10.47	1	37	36

Qualifications and training. Frequencies for qualification and training revealed that most teachers in the study have a teaching qualification or were pursuing one at the time of the study. Qualifications ranged from a Diploma to an Honours Degree. Only less than 1% indicated to have only a certificate or no qualification. In this sample, close to one third of the teachers had the Bachelor of Education degree (pre-service and distance mode, 31.3%), more than one third (34.7%) were pursuing the Diploma in Junior Primary Education (pre-service and in-service), while 14.7% had obtained the Basic Education Teachers' Diploma (pre-service and distance mode). The rest of the qualifications were split among the Advanced Certificate in Education (ACE, 6.7%), the Diploma in Pre-Primary or Junior Primary at the Institute of Open Learning (IOL, 3.3%), and other (9.3%). Figure 10 shows proportions of highest qualification of participant teachers. The majority of teachers were pre-service teachers who were currently studying either for a Bachelor's degree in Education or a Diploma in Junior Primary Education at the University of Namibia.

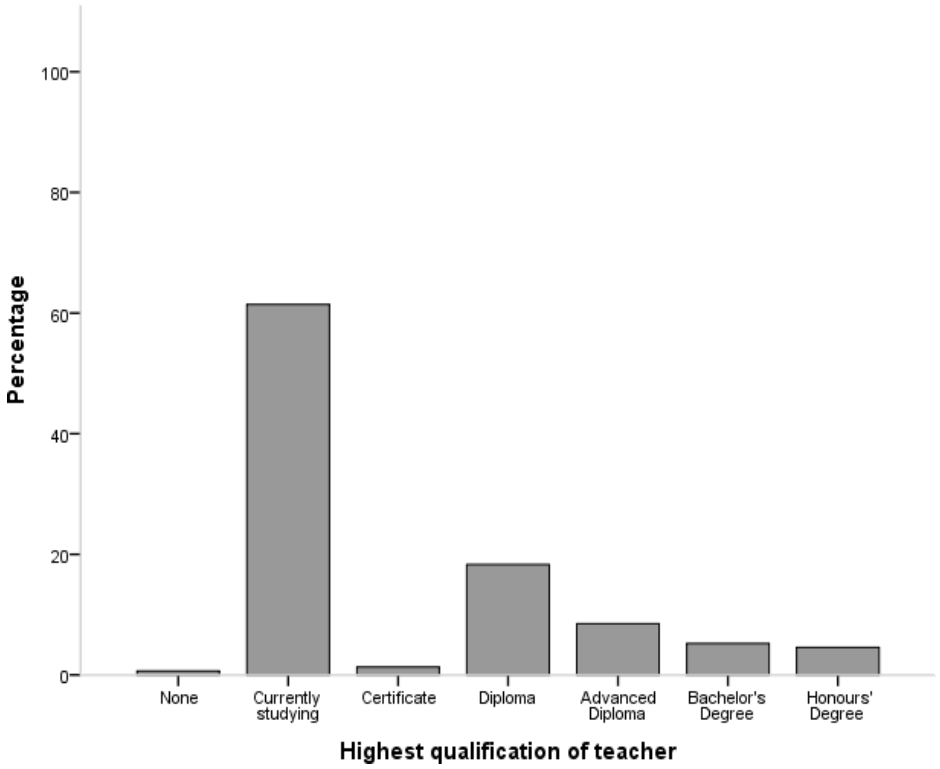


FIGURE 10 Proportions of highest qualifications of participant teachers (N = 153)

The first research question of PART II aimed to determine the training of teachers in different aspects of Junior Primary Oshikwanyama literacy instruction. Table 9 shows different training areas of teachers in the study (PART II, RQ 1). Regarding training of teachers in this sample, at Junior Primary level as well as in Oshikwanyama language and its literacy instruction, teachers' responses indicated that the majority of them had received training at Junior Primary level. With regard to training of Oshikwanyama language teaching, a large percentage of them also indicated to have received training. Many teachers further indicated to have received training in literacy instruction skills namely, reading instruction, writing instruction, phonics instruction as well as phonological awareness instruction. It is important to note, however, that the type/form and duration of training varied vastly among the teachers.

For *Pre-service teachers*, training was mainly in form of either four years or three years of study, depending on whether they were studying for a degree or diploma, respectively. In the *Experienced teachers group*, training was indicated as a type of workshop with the duration ranging from two weeks, two days or one day. In the *In-service* group, training was either indicated in the form of the in-service programme (4 years) that these teachers were undergoing at the time of the study, or as workshops with the same duration as indicated by the experienced group.

The sub-question RQ1.1 aimed to explore differences in the training of the three teacher groups. Results of teacher comparisons in training are shown in

Table 14. Crosstabulation results (X^2) showed that the teacher groups differed in training aspects. Regarding teaching experience, all three groups differed. *Experienced teachers* had the most teaching experience in Junior Primary, and *Pre-service* teachers the least experience. Regarding training at Junior Primary level, *Pre-service* teachers were more likely to be trained, followed by *Experienced teachers*, then *In-service teachers*. Training for Oshikwanyama language teaching revealed differences between *Pre- service* and *In-service* teachers that *Pre-service* teachers were more likely to have training than *In-service* teachers. With regards to reading instruction, the *Pre-service* group was more likely to have training than *In-service* and *Experienced* teachers. Training in writing instruction of Oshikwanyama revealed that *Pre-service* teachers were more likely to have training than *In-service* and *Experienced* teachers. Similarly, with regards to phonics, results revealed that the *Pre-service* group was more likely to have training than the *In-service* and *Experienced* groups. Training in phonological awareness also revealed differences between all groups of teachers that *Pre-service* teachers were more likely to have training than *In-service* and *Experienced* teachers.

TABLE 14 Differences in training of Pre-service, In-service and Experienced teachers (N = 153)

Aspects of training in Oshikwanyama laguage	Preservice teachers (n = 75)		Inservice teachers (n = 34)		Experienced teachers (n = 44)		
	n (yes/no)	%	n (yes/no)	%	n (yes/no)	%	$X^2(2)$
At Junior Primary level	73/1	98.6/1.4	20/12	62.5/37.5	37/7	84.1/15.9	25.62***
Oshikwanyama language teaching	67/6	91.8/8.2	14/20	41.2/58.8	31/13	70.5/29.5	31.46***
Reading instruction	68/4	94.4/5.6	14/8	63.6/36.4	29/11	72.5/27.5	15.53***
Writing instruction	69/3	95.8/4.2	13/9	59.1/40.9	28/12	70.0/30.0	21.14***
Phonics instruction	68/3	95.8/4.2	11/14	44.0/56.0	27/15	64.3/35.7	33.60***
Phonological awareness instruction	66/6	91.7/8.3	12/17	41.4/58.6	23/20	53.5/46.5	33.08***

Note. ***$p < 0.001$

5.2.2 Teachers' conceptual knowledge level of early literacy instruction of Oshikwanyama language and its constructs

The second research question of Part II was to investigate Junior Primary teachers' conceptual knowledge level of early literacy instruction of Oshikwanyama language and Oshikwanyama language constructs. More specifically, teachers' knowledge level of Oshikwanyama language phonology and morphology, literacy concepts as well as teaching methods and strategies are focused on (Part II, RQ 2).

Descriptive statistics of teachers' phonological and morphological knowledge are shown in Table 15. The results showed that teachers' knowledge at *phoneme level* was low, and a similar pattern of knowledge was observed across the three teacher groups. Most teachers could not tell how many sounds are in the words given. In most cases, it was evident that they were counting syllables, instead of phonemes. Few teachers also left this question open. At *syllable level*, teachers had fairly good knowledge. Most of them indicated the right number of syllables in the three words. Once again, this was similar across the three teacher groups. Knowledge regarding *digraphs* in Oshikwanyama language was fairly adequate. At morphological level, which mainly focused on affixes, that is, prefix, stem and suffix of common words, teachers showed slightly low knowledge (Table 15). Overall, teachers' concept knowledge of literacy instruction concepts in Oshikwanyama language revealed a low mean sum score ($M = 0.63$, $SD = 0.28$). This indicates a lack of knowledge regarding concepts related to literacy namely, phonological awareness and phonics. With regards to knowledge of teaching methods and strategies identification in Oshikwanyama language, teachers showed a low mean sum score, again indicating a lack of knowledge of common literacy methods and strategies.

The sub-question of research question two (RQ 2.1) explored differences in knowledge of *Pre-service*, *In-service* and *Experienced* teachers. Results from Kruskal-Wallis H test revealed statistically significant differences among teacher groups (Table 15). Differences among the teacher groups were found in phonological awareness knowledge in the sub-knowledge of digraphs and syllables. In the knowledge of digraphs, results of pairwise comparisons revealed that the differences were between the *Pre-service* and *In-service* groups. *Pre-service* teachers had better knowledge than *In-service teachers*. There were no statistically significant differences between *Pre-service* and *Experienced* teachers or between *Experienced* and *In-service* teachers, in digraph knowledge. With regards to syllables knowledge, results showed that the *Pre-service* and *Experienced* groups differed. The *Pre-service* group had better knowledge of syllables than the *Experienced*. There were no differences between the *Pre-service* and *In-service* or *Experienced* and *In-service*. In morphological knowledge, differences were found between *Pre-service* and *In-service* teachers as well as *Pre-service* and *Experienced* teachers. *Pre-service* teachers had better morphological knowledge than the *In-service* and *Experienced*. There were no statistically significant differences between the *In-service* and *Experienced* teacher groups. Results also revealed that there

were differences in teacher groups, regarding literacy concepts knowledge. The *Pre-service* and *In-service* as well as the *Pre-service* and *Experienced* groups differed. The *Pre-service* group had better knowledge than the *In-service* and *Experienced* groups. No statistically significant differences were found between the *In-service* and *Experienced* teacher groups. With regards to knowledge of teaching methods and strategies, the study also found differences among teacher groups. Pairwise comparisons revealed that *Pre-service* and *In-service* teacher groups differed. *Pre-service* teachers had better knowledge of teaching methods and strategies concepts than *In-service* teachers. Differences between *Pre-service* and *Experienced* as well as between *Experienced* and *In-service* teachers were not statistically significant.

TABLE 15 Descriptive statistics and Kruskal-Wallis test results of teachers' knowledge (N = 153)

	Preservice teachers (n = 75)			Inservice teachers (n = 34)			Experienced teachers (n = 44)			Kruskal-Wallis test results
	M	*SD*	*Md*	*M*	*SD*	*Md*	*M*	*SD*	*Md*	$\chi^2(2)$
Phonological knowledge										
- Phonemes (3)	0.35	0.65	0	0.24	0.50	0	0.21	0.42	0	0.96
- Digraphs (2)	0.98	0.13	1	0.89	0.28	1	0.95	0.18	1	6.00*
- Syllables (4)	2.89	0.42	3	2.68	0.59	3	2.47	0.83	3	15.53***
Morphological knowledge										
- Affixes (3)	1.30	0.75	1	0.79	0.42	1	0.93	0.63	1	15.26***
Concept knowledge (4)	0.79	0.18	0.88	0.47	0.29	0.5	0.48	0.28	0.5	45.35***
Teaching methods and strategies knowledge (3)	1.44	0.87	1	0.68	0.68	1	1.07	0.73	1	19.84***

Note. In parentheses, the number of items; *p < 0.05, ***p < 0.001.

5.2.3 The relationship between teacher training, qualification, teaching experience and knowledge of teachers

The third research question (Phase II, RQ 3) explored the relationship between training, qualification, teaching experience and conceptual knowledge of early literacy instruction of teachers. Results of Spearman's correlations (see Table 16) showed positive correlations between *highest qualification* and *teaching experience*. This implies that the higher the qualification of the teacher was, the more experienced the teacher. Positive correlations were also found between *training for Junior Primary level* and *training for Oshikwanyama language, training in reading instruction of Oshikwanyama language, training in writing instruction of Oshikwanyama language, training in phonics instruction in Oshikwanyama language* as well as *training in phonological instruction in Oshikwanyama language.* This shows that if a teacher was trained for Junior Primary level, then they were also trained in Oshikwanyama language as well as the areas of literacy instruction mentioned above. Similarly, positive correlations were found between training in Oshikwanyama language teaching and training in Junior Primary, in reading instruction, in writing instruction, in phonics instruction as well as in phonological instruction of the language. This means that if a teacher was trained in Oshikwanyama language teaching, they were also most likely trained in its instruc- tion in various aspects such as reading, writing, phonics and phonological awareness.

Positive correlations were also found between training areas namely, being trained at Junior Primary level, trained in Oshikwanyama language teaching, trained in reading instruction, trained in writing instruction, trained in phonics instruction, trained in phonological awareness instruction and knowledge in syllables, morphology, literacy concepts as well as teaching methods and strategies (see Table 17). The correlations were statistically significant. This implies that if a teacher was trained at Junior Primary level, in Oshikwanyama language teaching, in reading instruction, in writing instruction, in phonics instruction, in phonological awareness instruction, they were also likely to have fairly good knowledge of syllables, morphology, literacy concepts as well as knowledge of teaching methods and strategies in Oshikwanyama language. In contrast, if a teacher was not trained at Junior Primary level, in Oshikwanyama language teaching, in reading instruction, in writing instruction, in phonics instruction, in phonological awareness instruction, they were also likely to have a lack of knowledge of syllables, morphology, literacy concepts as well as knowledge of teaching methods and strategies in Oshikwanyama language. Correlations between training in Oshikwanyama language teaching, reading instruction, writing instruction, phonics instruction, phonological awareness and phoneme level knowledge were not statistically significant.

In contrast, negative correlations were found between highest qualification and training areas namely, trained at Junior Primary level, trained in Oshikwanyama language teaching, trained in reading instruction, trained in writing instruction, trained in phonics instruction as well being trained in phonological awareness instruction (Table 16). This implies that the more

qualified the teacher was, the less trained they indicated to have been in Junior primary, Oshikwanyama language, reading instruction, writing instruction, phonics instruction as well as phonological awareness instruction. Similarly, negative correlations were found between teaching experience and training areas namely, Junior Primary level, Oshikwanyama language teaching, reading instruction, writing instruction, phonics instruction as well phonological awareness instruction. In the same manner, it appeared that the more teaching experience the teacher had, the less trained they were. Negative correlations were further found between the level of qualification and teaching experience with knowledge in syllables, morphology, literacy concepts as well as knowledge of teaching methods and strategies. In the same manner, this implies that the more qualified the teacher was, the less knowledge they had in syllables, morphology, lit- eracy concepts as well as in teaching methods and strategies of literacy instruction. It also means that the more teaching experience teachers had, the less knowledge they had in syllables, morphology, literacy concepts as well as in teaching methods and strategies of literacy instruction. Correlations of highest qualification and teaching experience with phoneme knowledge were not statistically significant (see Table 17).

TABLE 16 Spearman's correlations among teacher training variables of Junior Primary teachers (N = 153)

Measures	1	2	3	4	5	6	7	8
1. Highest Qualification	-							
2. Teaching experience	.651**	-						
3. Training for JP level	-.287**	-.129						
4. Edu/Training for Oshilanguage	-.168*	-.164*	.447**	-				
5. Edu/Training for Reading	-.279**	-.184*	.330**	.783**	-			
6. Edu/Training for Writing	-.370**	-.203*	.385**	.708**	.820**	-		
7. Edu/Training for Phonics	-.251**	-.266**	.481**	.570**	.545**	.622**	-	
8. Edu/Training for PA	-.286**	.279**	.373**	.599**	.481**	.522**	.795**	-

Note. *$p < 0.05$, **$p < 0.01$

TABLE 17 Spearman's correlations between Training and Knowledge of Junior Primary teachers (N = 153)

	Phoneme level knowledge	Syllables knowledge	Morphological knowledge	Teaching methods Knowledge	Concepts knowledge
Highest Qualification	-.14	-.34**	-.19*	-.20*	-.36**
Teaching experience	.00	-.20*	-.21*	-.25**	-.46**
Training for JP level	.04	.23**	.22**	.27**	.09
Training for Oshi-lan-guage	.04	.22**	.11	.28**	.26**
Education/Training for Reading	.08	.17*	.12	.13	.30**
Education/Training for Writing	.13	.16	.12	.11	.30**
Education/Training for Phonics	.16	.04	.20**	.17*	.34**
Education/Training for PA	.17	.07	.11	.08	.33**

Note. *p < 0.05, **p < 0.01

6 DISCUSSION

The present thesis focused on examining pathways of children learning to read and spell in a Namibian local language during the first and second grade. Besides that, the study provided some insight into teacher training in local language instruction in early years, how much teachers know about fundamental aspects of learning to read and write as well as instruction of early literacy. These formed the two distinct, but related parts of the thesis.

More specific research questions for PART I examined whether pre-literacy skills (phonemic awareness, letter knowledge and rapid naming) in the beginning of school predicted reading and spelling at the end of the first school year. This part also explored the dynamics in the development of children's reading and spelling skills in the two years. In general terms, the main results of the first part of the thesis are that, learning to read and spell in Oshikwanyama language in the first year of primary school was associated with pre-literacy skills that children had when they started Grade 1. Dynamics of reading and spelling in the first two years of school revealed that reading skill developed more rapidly than spelling skill. The results also consistently showed close and strong associations between reading and spelling skills.

Specific research questions for PART II explored the knowledge of teachers in phonological and morphological structures, in literacy concepts as well as knowledge of teaching methods and strategies. Differences in teacher groups regarding their training and knowledge were also examined. Questions further explored the relationship between training, qualifications, teaching experience and knowledge of teachers in the respective knowledge aspects. The main results of PART II of the thesis revealed a significant gap in teachers' knowledge of Oshikwanyama structure as well as conceptual knowledge of early literacy and its instruction. In addition to that, the study revealed differences with regards to training, qualifications and knowledge among the teacher groups examined. The study further found positive relationships between highest qualification and teaching experience. Positive relationships were also found between being trained at Junior Primary level and being trained for Oshikwanyama language teaching and being trained for reading, writing, phonics and phonological

instruction in Oshikwanyama language. Negative relationships were found between training, qualifications, teaching experience and phonological knowledge, morphological knowledge, literacy concepts knowledge as well as knowledge of teaching methods and strategies of teachers.

6.1 PART I: Children's literacy skills development

6.1.1 Predictive associations of pre-literacy skills with decoding and spelling

The first aim of Part I in this thesis was to investigate the antecedents of reading and spelling skills in Oshikwanyama language in the first grade. This was the first time in Oshikwanyama language in Namibia to investigate these associations in a scientific way. The results were consistent with previous studies in other transparent orthographies (Torppa et al., 2013; Veii, 2015). Phonological awareness and RAN at the beginning of school directly predicted decoding as well as spelling skills at the end of the first school year (Gallagher, Frith, & Snowling, 2000; Lerkkanen et al., 2004). The findings of the present thesis imply that the higher phonemic awareness and faster rapid naming skills the children had in the beginning of Grade 1, the better they could read and spell words at the end of Grade 1 in Oshikwanyama language. The strongest correlation of .73 found between decoding and spelling was in line with numerous studies having highlighted the fact that reading and spelling develop concurrently (Ehri, 2000; Lerkkanen et al., 2004; Morrow, 2012). Phonemic awareness, letter knowledge and RAN at the beginning of the school year also correlated with one another at the end of the year at different extents. An unexpected result from the path model was that letter knowledge neither predicted decoding, nor spelling directly, but indirectly through phonemic awareness and RAN. This means that children who could read and spell at the end of Grade 1 are not necessarily only those who knew letters at the beginning of Grade 1 and vice versa. This could also mean that, children had learnt letters during the course of the first school year from their teachers and, therefore, could read and spell by the end of the year. In contrast, it could mean that knowing letters at the beginning of school did not help some children much if they could not progress to the next level of grapheme-phoneme relationships which are necessary for decoding and spelling. However, due to the strong covariance shared by phonemic awareness and letter knowledge, the association of letter knowledge with decoding and spelling is implied.

Children's pre-reading skills, namely phonemic awareness and letter knowledge were very low in the beginning of school. This result was expected as children had not been formally instructed yet with regard to phonemic awareness and letter names or sounds at pre-primary. Although there are enough opportunities for phonological awareness activities in the pre-primary curriculum (Ministry of Education, 2015), the results showed that only slightly

more than one third of the children (35.3%) attended pre-primary. The other barely more than one third (34.0%) attended community kindergarten and slightly less than one third (30.7%) did not attend any early childhood education prior to Grade 1. All in all, these results show a true reflection of children at school entry stage (Grade 1) as they have not been formally taught letters yet. This is also in line with the early literacy instruction norm that literacy in pre-primary or kindergarten is highly informal. It focuses more on perceptual activities and learning through play (Ministry of Education, 2015). Emergent literacy at home is also not such a realistic concept yet in Namibia, especially in the part of the country where the study was undertaken.

In sum, print exposure before school is quite minimal. This is due to the unavailability of reading materials in general and in particular, in the local languages. That, and also the non-reading culture of parent to child at home could all be contributing factors to low pre-literacy skills in the beginning of school. In other societies such as the Finnish in which half of the families had more than 50 children's books at home and 84.1% of parents read bedtime stories to their toddlers while 88.4% read to their 6 year-olds (Lerkkanen, 2019), the pre-literacy situation is quite the opposite.

These results tell us that Home Literacy Environment and environmental print are important components of literacy development as they contribute to pre-literacy skills that ease children's processes of learning to read and spell. The same is true for Pre-Primary attendance.

6.1.2 Developmental dynamics of children's decoding and spelling skills from Grade 1 to Grade 2

The second aim of Part I was to explore the developmental dynamics and pathways of children's reading and spelling skills from Grade 1 to Grade 2. The study revealed quite some interesting paths and dynamics regarding the children's development of reading and spelling skills from Grade 1 to Grade 2. At the end of Grade 1, when it comes to decoding, it was obvious that children were either high level decoders for the task (45.2%) or low level decoders for the task (44.4%) as only 10.3% of the chil- dren belonged to the middle level decoding category. This seems to tell that learning to read or instruction for reading could either be a success or failure by the end of Grade 1. Previous studies have reported decoding to be a faster skill to develop in languages with transparent orthographies (Seymour, Aro & Erskine, 2003; Veii, 2015) than in opaque orthographies.

As children progressed to Grade 2, it was seen that 96.5% of those who belonged to the group of high level decoders at the end of Grade 1 maintained their high level decoding skills at the end of Grade 2, and a large percentage of 84.6% of middle level decoders also remained in the middle level decoders subgroup at Grade 2. From a rank order point of view, this seems to show decoding as a more stable skill as most of the children maintained the level of their skills or actually improved. Results, actually, also showed growth in decoding skill development as a large percentage (66.1%) of children who were non-readers at first grade

gained decoding skills during instruction and belonged to the middle to high level decoders subgroup at the end of Grade 2. The grouping of average and good decoders is not ideal, but as explained in section 4.2.3, the cut-offs were determined according to the distributions of the results. However, although cut-offs were different in different time-points, there was a sign of reduction in the amount of low level decoders who were 18.3% (less than half) at Grade 2, compared to 44.4% at Grade 1. This implies a good increase in decoding skill.

All these seem to suggest that the big chunk of decoding ability is acquired by the end of Grade 1, that if a child is a high level decoder at the end of the first grade, he/she is more likely to progress well with the reading skill by the end of the second grade, that there would be no reason to worry about this child. However, if a child could not read by the end of the first grade, it seems there is reason to worry that the same child might still be a low level decoder by the end of the second grade. This is the child who might be regarded as at risk for reading difficulties. As the results showed, 16% of the children could read all 20 words correctly and 71% could read 15 to 20 words correctly. Although it came much later by a year and a half than it is the case in Finnish children of which the majority learn to read during the first semester of Grade 1 (Lerkkanen et al., 2004), results of Namibian children learning to read Oshikwanyama language also reached the ceiling by the end of Grade 2. However, there is still room for improvement. Only two children (3.5%) dropped from the high level decoders subgroup at Grade 1 to the low level decoders at Grade 2. Most likely, there is a good explanation for the decline in these two children's skills.

The trajectories that children followed when they learnt to spell showed that children improved more from the low level spellers subgroup to the middle level spellers group than from the middle level group to the high level spellers group. This implies that at the end of Grade 2, most children had middle level spelling skills and not yet high level spelling skills. This is supported by the fact that, by the end of Grade 2, no child could spell all 10 words correctly and the mean was very low. These results are in line with previous studies that the spelling skill takes much longer time to develop compared to decoding skill (Torppa et al., 2017). The results also seem to suggest that spelling skill develops so unpredictably, that even if one was in the highest level of spelling at Grade 1, there is a 50% chance that their spelling skills could drop in the next grade or if one was a lowest level speller at the end of Grade 1, there is still 50% chance that they could improve their skills to be either middle or highest level spellers. These are not exactly surprising results, as we all know that spelling is a much more sophisticated skill to learn. Unlike reading in transparent orthographies, it demands a productive response and has many underlying morphological and phonological rules. In the process, the brain has to translate the sounds heard, map them to the symbols which it must first remember and visualise, putting in mind the morphological structure that will make the word correct in the specific language (Ehri, 1987; Share, 1999). In the process, the mind also has to look for familiarity of the structure of that word, from memory. Then, finally the mind

has to remember the correct shapes and directions of letters to write the word heard.

Another point of interest from the findings is that spelling seemed to determine decoding, but decoding did not seem to determine spelling. It came out that if a child was a good speller, there was a 90% chance that they were also good decoders. However, if a child was a good decoder, there was a 50/50 chance to be either a good, average or poor speller. In other words, if a child is a good speller, we know that he/she is also a good decoder, but if a child is a good or poor decoder, we do not know much about his/her spelling skills. Again, this points to the intricacy of the spelling skill.

In sum, path models showed that decoding and spelling skills formed strong reciprocal relationships during the two years, signifying the closeness and interde- pendence of the two skills. Reciprocal relationships between reading and spelling have been well established by previous studies in transparent orthographies (Lerkkanen et al., 2004; Torppa et al., 2016).

Moreover, the working memory scores were very low, with the backwards dig- it span being poorest. Correlations of reading and spelling skills indicate that these skills are related and influence one another. The exception with the digit span forwards (short term memory) not correlating with measures such as letter knowledge, rapid naming, digit span backwards, decoding time and spelling is also in line with previous research (Nouwens, Groen, & Verhoeven, 2017). This trend is replicated between the measures at grade 1 and 2 as short-term memory did not correlate with many skills. Its correlation only with decoding, fluency and comprehension is an interesting and logical finding that validates previous research (Nouwens et al., 2017).

Other interesting findings are that word decoding and comprehension were not correlated but spelling was correlated with comprehension. Although this is an unexpected finding, the Namibian EGRA study has also reported the same (Gains & Parkes, 2012). South African studies have also highlighted the lack of reading for comprehension in that country as from the last PIRLS study, 78% of Grade 4 children could not read for meaning (Howie, et al., 2017; Pretorius and Klapwijk, 2016) and results were much lower in local languages. One could interpret this that, especially in the languages where decoding is very transparent, although children can decode words, they might not necessarily understand much of what they are reading. This could mean that children's reading was still at word decoding level and/or that instruction until Grade 2 focused more on decoding than other aspects of reading. Tobia and Bonifacci (2015) have also explained that the association of decoding with comprehension is based on the transparency of the orthography. In opaque orthographies, decoding is associated more with comprehension than in transparent orthographies in which listening comprehension was found to be a better predictor of reading comprehension. However, reading benchmarks are also a topical issue as most benchmarking for educational outcomes is western-based. Spaull et al. (2020) have presented minimum thresholds for comprehension in Northern Sotho,

Xitsonga and isiZulu, in their recent study. This could be a start for benchmarking reading outcomes in Southern Africa.

Of note in the correlations is that fluency correlated with all other measures and spelling correlated with all, except with digit span forwards (short-term memory). Fluency correlations were slightly stronger between word decoding and fluency and spelling and fluency. This seems to tell that fluency is an expression of the realization of the integrated reading skill. It further tells about the role of fluency and automaticity in decoding and spelling and suggests continued use of fluency strategies. Previous studies found repeated reading as the most effective way to improve fluency and more recent studies have found both repeated reading and continuous text reading to be effective fluency strategies (Hammerschmidt-Snidarich, Maki, & Adams, 2019; O'Connor, White & Swanson, 2007). For example, O'Connor et al. (2007) used repeated reading and continuous reading as fluency strategies and found that there were significant differences in fluency and comprehension of the treatment and control groups. Once again, due to the paucity of reading research and benchmarking in African indigenous languages, one cannot comment much about the fluency mean of 24.26 wcpm obtained in the present study. Emerging South African reading studies have reported oral reading fluency scores of 19 wcpm for conjunctive languages, for example, and 35 wcpm for a disjunctive language that was studied (Spaull et al. 2020). This puts the 24.26 wcpm Oshikwanyama fluency rate obtained in the present study somewhere in-between. Given that it also has disjunctive orthography, this rate can be considered low. Spaull et al.'s (2020) study suggested minimum thresholds for different languages tested, based on the type of orthography. They gave minimum fluency thresholds as 53 wcpm for Northern Sotho (disjunctive), 39 wcpm for Xitsonga (in-between) and 20 wcpm in isiZulu (conjunctive).

The association of spelling with all other measures, except short-term memory could show something about the nature of mapping phoneme to grapheme in Oshikwanyama language. To validate the present findings, more studies need to be done with spelling and with more items in Oshikwanyama language. The short-term memory (forwards) and working memory (backwards) being not related also leave some questions. At Grade 2, short-term memory was again the only measure not correlating with others, except with decoding, fluency and comprehension skills.

Finally, an interesting finding with regards to children's development of literacy skills during grades 1 and 2 were the differences found with regards to pre- primary attendance, gender, age as well as schools. The fact that children who attended pre-primary had better skills overall than children who did not attend either pre-primary or kindergarten was expected as it confirms the significance of pre- primary attendance. Other studies have also found that pre-primary attendance had an effect on the development of literacy skills in the early grades (Gains & Parkes, 2012) as well as on other academic skills (Magnuson, Ruhm & Waldfogel, 2007). This finding also seems to confirm that the Namibian pre-primary syllabus is effectively preparing children for early literacy

acquisition skills. The fact that the effect of pre- primary waned after Grade 1 was also an interesting finding as it suggests that the development of reading and spelling skills after Grade 1 might be dependent more on instruction than on emergent literacy skills before Grade 1. The study also seems to confirm that the older the child was, the better skills they had at the beginning of Grade 1 as well as end of Grade 2. The explanation for this might be that slightly older children might have had more exposure to letters and sounds than slightly younger children. As the results showed, age 7, which is an entry age in Grade 1 in Namibia, was a better age to have better pre-literacy and literacy skills than age 6 or 8. The finding that boys were faster in RAN and girls in fluency was also an interesting one. Other studies have found girls to be better readers than boys in the earlier years of school (Solheim, Torppa, Uppstad & Lerkkanen, 2020), although in some other studies, gender was not found to play an important role in overall reading per- formance of children (Vlachos & Papadimitriou, 2015). Differences in schools seem to indicate that different schools might have different initiatives to capacitate their teachers in literacy instruction, as it showed in how children from different schools performed.

6.2 PART II: Teacher knowledge on literacy instruction and Oshikwanyama language

6.2.1 Training and differences among Junior Primary teacher groups

The aim of Part II in this thesis was to determine the Junior Primary school teachers' training as well as differences in training among pre-service, in-service and experi- enced teachers. Further, the thesis examined Junior Primary school teachers' knowledge of literacy instruction aspects in Oshikwanyama and of Oshikwanyama language constructs. Differences in knowledge were further explored among teacher groups as well as the relationship between training, experience and knowledge of early literacy instruction of teachers. The main finding about the training of teachers was that training was not a worrisome factor. The present thesis provided evidence that the majority of the Junior Primary teachers in the sample had been trained to teach at Junior Primary level (86.7%) as well as in Oshikwanyama language teaching (74.2%). This is in line with February (2018) findings that 91 % of Namibian Junior Primary teachers sample in Khomas region indicated to have a teaching diploma. In contrast to February's (2018) study that found that more than one third of the teachers in her sample indicated not to have been trained in reading instruction in English, 82.8% teachers in the present thesis indicated to have been trained for reading in- struction in Oshikwanyama. Moreover, 82.1% had training in writing instruction of Oshikwanyama, 77.0% in Oshikwanyama phonics instruction and 70.1% in phono- logical awareness in Oshikwanyama.

The fact that training in Oshikwanyama language was sufficient to indicate training in different areas/aspects of instruction such as reading, writing,

phonological awareness and phonics is a good indication that the curriculum of Oshikwanyama language Education might have included essential aspects of literacy instruction. However, the variation in the type and duration of training matters in this thesis as it appeared that training varied vastly from 1–2 days or two weeks, mostly as work- shops for experienced and in-service teachers, to 4 years, mainly for pre-service teachers. Variation in teacher training appears to be common in teacher research. In her study, Alatalo (2015) also explained different training backgrounds of teachers in Sweden. Statistically, the study also found that there were significant differences in the training of different teacher groups. This variation in training could be the responsible factor for the variation in knowledge also revealed among the teacher groups.

6.2.2 Conceptual knowledge of Junior Primary teachers

One of the main findings in this part of the thesis was that teachers had a knowledge gap in Oshikwanyama language phonological skills at phoneme level, morphologi- cal level, literacy concepts level as well as in knowledge of teaching methods and strategies. Most of the teachers could not count the number of phonemes in the words correctly. This finding was not completely surprising as phonological awareness, of which phoneme awareness is part, is a relatively novel concept with regard to teacher education in Namibia. Other studies have also reported the same phenomenon (February, 2018; Shingenge, 2017). What seems to be known and mostly practised by teachers in Namibia is phonics, which is also essentially based on phonemes. However, internationally and based on the findings of the eminent National Reading Panel of 2000, phonemic awareness was also underlined as one of the five essential components of reading (Armbruster, Osborn & Adler, 2009). Although teachers' knowledge and children's outcomes could not be linked in this study, one could still make a speculative connection between the lack of phoneme understanding by teachers and children's poor phonemic awareness skills until the end of Grade 2. A positive finding was that teachers' knowledge of syllables was fairly good, although there were also significant differences in teacher groups. This might also be linked to the children's syllabic answers when asked for initial phoneme identification and when they were reading words syllabically. Awareness of syllables in both teachers and children might be due to the natural development of Oshikwanyama language as syllables are open and the stress falls mostly on the first syllable, like it is the case with the Finnish language (Aro & Bjorn, 2015). Wilsenach's (2019) study of children learning Northern Sotho in South Africa also found that they were better at identifying syllables than phonemes.

Teachers' lack of knowledge with regards to literacy concepts such as what phonological awareness and phonics are, for example, as well as concepts for differ- ent teaching methods and strategies used in early literacy instruction was also not completely unique to this thesis. Other studies, both locally (February, 2018; Shingenge, 2017), regionally (Pretorius & Klapwijk, 2016; Taylor, 2019) and internationally (Alatalo, 2015; Aro & Björn, 2015; Joshi et al., 2015; Purvis et al., 2015; Washburn et al., 2015) have reported a similar phenomenon. In the

Namibian teacher training context, this could be due to the reason that, capacity building for teachers since independence has focused mostly on English language teaching than in the teaching of indigenous languages. Therefore, teachers might know the concepts in English, but not in Oshikwanyama. This explanation is also valid for knowledge of the language structure such as phonology and morphology as not many teachers studied Oshikwanyama as a language or its pedagogics, for example, during teacher training.

Moreover, significant differences were found among the teacher groups in the sub-knowledge areas of digraphs, syllables, morphology, concept knowledge of literacy concepts, as well as teaching methods and strategies. The fact that differences were typically found between the *Pre-service* group on the one hand and the *In-service* and *Experienced* groups on the other is an interesting finding. Further, the fact that *Pre-service* teachers had better knowledge in all knowledge areas examined than *In-service* and *Experienced* teachers was also an interesting one. One would expect that *Experienced* teachers would have better knowledge than *In-service* teachers as experienced teachers had undergone training for Junior Primary teaching, have more years of experience and have indicated so in the questionnaire. As for the *Pre-service* group, the explanation seems to be the fact that their training is recent and have been introduced to contemporary literacy concepts than the other groups. In Aro and Bjorn's (2015) study among Finnish teachers, in-service teachers outperformed pre-service teachers in phonology, phonics and morphology, a contrast to the present thesis findings. This could mean that in-service training in Finland is continuous and up-to-date with literacy trends. Finnish education has also a strong emphasis on Finnish language in general and teachers pick up most of the knowledge and skills 'on the job' as opposed to during pre-service training. The opposite seems to be true in Namibia that latest knowledge seems to be more accessible during pre-service than 'on the job'. With regards to their study as well as Alatalo's (2015) study among Swedish teachers, teaching experience seemed to have added value to teachers' knowledge. Results in the present thesis indicated that recent teacher education in the local language is showing some positive outcomes as revealed by pre-service teachers' results in Namibia. Taylor (2019) echoes the same sentiments as he states in his study of inequalities in teacher knowledge in South Africa that, pre-service teacher education seems to provide the optimal point to fill the inequality gap in South African schools. This is a glimpse of hope for teacher education in the two Southern African countries.

The fact that the experienced teacher group that consisted of qualified teachers both in the teaching qualification and at the junior primary level, did not differ much from the in-service group that either had no teaching qualification at all or had a qualification in a different field, is a little unexpected. Based on this finding, it appears that teaching experience did not add much value to teachers' knowledge. However, a possible explanation could be that, most of the experienced teachers did their training, mainly the BETD through the in-service mode as well. This could mean that the length of time spent in training, and the breadth and depth of the curriculum could be less effectively covered than it is

in the full-time mode. As discussed previously, it could also mean that teacher education content at Junior Primary and specifically in local languages, in Namibia, has improved over time.

6.2.3 The relationship between training, qualification, experience and knowledge of teachers

Positive correlations between training aspects and knowledge in syllables, morphology, literacy concepts and teaching methods and strategies was a positive finding in this study. This implies that the more teachers indicated to have been trained to teach at Junior Primary level, trained in Oshikwanyama language teaching, trained in reading instruction, trained in writing instruction, trained in phonics instruction, trained in phonological awareness instruction, the better knowledge they had and vise versa. The fact that these correlations were not significant at phoneme level indicate the less variation in phoneme knowledge of teachers as most of them had lack of knowledge in that aspect.

An interesting finding with regards to training, qualification and experience was, in fact, the inverse nature of correlations. For example, the more qualified the teachers were, the less trained they indicated to have been. In the same fashion, it appeared that the more experienced the teacher was, the less trained they were. When it comes to knowledge in different areas, the study revealed similar findings that, the more qualified the teacher was, the less phonological, morphological, instructional and conceptual knowledge they reported to have had about Oshikwanyama language constructs as well as its literacy instruction. Again, these findings seem to confirm the differences in earlier and more recent teacher training at Junior Primary level. One could say that more qualified or more experienced teachers had less knowledge in the areas mentioned above because their teacher training content possibly did not include those concepts back then. In this case, it seems then that, the experience did not help much if the training lacked critical aspects, hence the negative correlations obtained between teaching experience and highest qualification with literacy concept knowledge and literacy instruction knowledge in this study. When we look at the children's data that most of them could still not read at the end of Grade 2, one could make the possible link to their teachers' lack of conceptual knowledge of foundation reading. As researchers agree, teachers' knowledge of literacy instruction predicts children's achievement in literacy (National Early Literacy Panel, 2008).

On the other hand, less qualified and less experienced teachers, in this case mostly pre-service teachers who were just at the end of their 3-year diploma or 4-year degree, had better knowledge of Oshikwanyama language phonology, morphology, literacy concepts as well as teaching methods and strategies because recent teacher training curriculum includes that content. At the University of Namibia, the teacher training programmes namely, the Bachelor of Education in Pre- and Lower Primary Education (4 years) and the Diploma in Junior Primary Education (3 years) train teachers in different Namibian languages. Ideally, students choose the language that is their mother tongue. This is also in response to the language policy discussed in the background section,

which stipulates that children must be taught in their mother tongue from Pre-Primary to Grade 3 (MBESC, 2003; MEC, 1993). Highest correlations found between training in Oshikwanyama language and training in reading, writing and phonological awareness instruction; training between reading and writing instruction; training in phonics and phonological awareness instruction all indicate the interrelatedness of these training aspects.

6.3 Practical implications

The pioneering nature of this study ought to be taken into perspective in all aspects of this thesis. An attempt was made to provide a description of how children learn to read and spell Oshikwanyama language in Namibia. In Namibian local language research context, there is lack of methods and tools. With regards to Oshikwanyama language in particular, the language, although well-developed in terms of structure, has little scientific studies. This implies that the first few studies, including the present one, are likely to have used untried, untested and unvalidated research methods and tools. In the researcher's view, this ought not to disregard the findings, but rather to regard them as stepping stones for further research.

The present thesis offers several pedagogical implications concerning the instruction of early literacy as well as teacher training and capacity building of teachers.

6.3.1 Explicit instruction of phonological awareness

One of the main implications from this study is on the prominence of phonological awareness instruction. As the study revealed that phonemic awareness directly predicted decoding and spelling ability, something that even letter knowledge could not, there is a strong need for explicit instruction of phonemic awareness for both children and teachers. In order to improve children's phonemic awareness that the thesis found lacking, teachers need to explicitly teach children phonological awareness (of which phonemic awareness is part), by doing phonological awareness activities. Phonological awareness activities start already in Pre-primary in the form of songs and rhymes. Junior primary teachers themselves need to be empowered with this skill too as the study pointed out that it was one of the areas in which they lacked. In this case, the Ministry of Education together with the University of Namibia need to organise capacity building workshops and teacher mentoring for Junior Primary teachers for literacy instruction in the Namibian languages.

6.3.2 Support for children's pre -literacy skills and the development of literacy skills during grades 1 and 2: Home Literacy Environment

Although the thesis did not include home literacy environment, its importance for emergent literacy skills is acknowledged (Chansa-Kabali, 2014; Lerkkanen, 2019; Ngorosho, 2011). The reason why children in this sample had low pre-literacy skills could be that their home literacy environment had not supported their skills before school entry. Emergent literacy skills need to be promoted in Namibian homes. Parents should buy and read storybooks to and with children at home, especially stories written in the mother tongue. Parents' workshops modelling reading and writing activities at home are encouraged. Television programs in local languages for children also need to be produced and screened on a regular basis. The wider society needs to develop an interest in writing books in the Mother tongue and invest in the culture of reading overall.

6.3.3 Instruction of reading and spelling

There is need for instruction of reading and spelling to go hand in hand and be accorded equal importance and time. Spelling should not be neglected as the study found that it actually determined decoding at Grade 2. Due to the slower pace of spelling skills development, teachers need to be patient with children and also try different strategies that enhance spelling development. Instruction of letter names also needs to be emphasized and not only letter sounds. Moreover, as the study showed that reading skill in Oshikwanyama language could be determined by the end of Grade 1, it is crucial for teachers to aim for all their children to be able to decode by the end of Grade 1, in order to avoid persistent reading problems later. It is also important to identify children who have reading difficulties at the end of Grade 1 to organise learning support already when they start the following year, to avoid the problem to persist even beyond Grade 2.

6.3.4 Teacher training, support and continuous professional development

The results of the present study implicate that the education curriculum of the Namibian languages education should emphasize and explicity equip pre-service teachers with phonological awareness skills. At the moment, phonological awareness is a learning outcome in the Namibian Language Education module in the B.Ed Pre- and Lower Primary degree, at the University of Namibia. However, due to the fact that the curriculum is heavily loaded, the amount of time spent on this outcome might not be adequate to explicitly cover and practise it. The curriculum transformation commencing in 2021 at the University of Namibia, is an opportune time to strengthen these concepts. Furthermore, teacher training institutions need to equip student teachers with comprehension strategies and teachers need to transfer these strategies to children on how to monitor their understanding of the texts. Comprehension texts and questions need to include the highest level of mental representation (Kim, 2017). Inferencing, was particularly difficult for children in this study and

needs to be explored more. Teacher training institutions need to especially build teachers' capacity regarding literacy instruction in the Mother tongue. They also need to do more research on the learning and development of local languages. In addition to that, they need to develop a pool of concepts and academic terminology in local languages.

Equally important, the Ministry of Education needs to provide capacity building workshops for teachers in local languages. Together with teacher training institutions, they can establish interdependent support for experienced and pre-service teachers through Experienced–Preservice Mentor Pairs in which an experienced teacher could be paired with a pre- service/novice teacher to empower one another.

6.3.5 Inclusion of children's literature in the school curriculum

The Junior Primary school curriculum needs to include children's literature under the reading domain**.** This is necessary in both Namibian languages as well as in English. Children's literature would cultivate the interest of reading in children in the early years and ultimately improve children's literacy outcomes in the early years. Accordingly, the Ministry of Education ought to produce and provide such books to the schools.

6.4 Ethical Considerations

This study followed common ethical principles upheld in the research fraternity of the two countries involved in this study, that is, Finland and Namibia – Finland being the place of the doctoral studies and Namibia being the site of research. The researcher was responsible of the ethical governance and steering the project along the guidelines of the Finnish National Advisory Board on Research Ethics (2009) and the ethical conventions for research with children, grounding its work on the spirit and the letter of the United Nations Convention of the Rights of the Child has been followed. These principles included making the intention of data collection known by relevant stakeholders, by asking for permission to conduct the study. In this case, letters of request for permission to conduct research in the Ohangwena Educational Region were sent through the Directorate of Education for Ohangwena Education region where the participating schools came from. Once permission was obtained to conduct research in the region, the schools were approached by the researcher personally, to explain the study and also the researcher's intention to conduct research at the school. The letters of request for permission to conduct such research at their schools were then presented.

Next, participants were recruited to the study on a voluntary basis. Letters of consent were given to the teachers as well as parents of the children selected to par- ticipate in the research. The letters of consent were translated into Oshikwanyama language for the parents as they might not have understood the

English version. These letters were collected by the teachers and given to the researcher after being signed by the parents. It was also made clear in the letters of consent that participation was voluntary and participants had the right to withdraw from the research at any point if they did not want to continue participating any longer. They were also informed according to ethical principles and notified about anonymity and archiving of research data. The data was anonymized following the guidelines of the Finnish Social Science Data Archive.

Participants were assured of their anonymity and confidentiality of research results throughout the research. Such anonymity was ensured by coding schools, children as well as teachers who participated in the study that, it is hard to tell by an outsider, which data belongs to which school, child or teacher, except, in general terms, the researcher herself. Although children were also filmed, this was also made known to teachers and parents and they were ensured that videos of children would not be used for any other purposes, except for the purpose of research. Where specific pictures or videos of children would be used in publications, separate consent would be sought for that. Videos were rather supporting the research process in data gathering but were not used for the research purposes of the present thesis.

Other important ethical aspects considered were, for instance, explaining to the schools and teachers that the aim of the research was not to assess or evaluate whether the children could read and spell or not or whether individual teachers knew about how to teach reading and spelling to the children or not, but rather to understand the process and stages that children go through when they learn to read and spell. This consideration was, especially important to emphasise as there is not such a study done in Oshikwanyama language as there is, in general, very little research done when it comes to indigenous languages in Namibia. Therefore, it was crucial to establish the importance of this particular research and to put all partici- pants at ease with the main intention.

During the data collection at different time points, the researcher also always informed the schools and sometimes the teachers. The Directorate of Education in the region was also informed when the researcher was back for data collection. This has made the data collection process quite smooth and avoided any possible misunderstandings.

The storage of the data is undertaken in accordance with the Jyväskylä University Ethical Committee Guidelines as it is stored securely in a locked filing cabinet and only the researcher has access to the data. The electronic version of the data is password-protected and only the researcher and data analyst, who is part of the supervisory team, have access to the data files.

Lastly, the overall ethical consideration is that, findings from the research will be shared with the Ohangwena Educational Region Directorate as well as the participant schools. This will be a matter of transparency as well as a way forward of discussing an intervention plan necessary for the region when it comes to learning to read and spell in early years, as well the most appropriate strategies for literacy instruction in Oshikwanyama language.

6.5 Limitations and future directions

There are a few limitations in this study. The first one is that, the tests used in this study are not standardised normative tests, but were designed by the researcher herself. This is because the language under study does not have existing standardised research test tools in place. The validity and reliability of the test items could, there- fore, be questionable. However, Cronbach's alphas were, between .67 and .95 for most of the measures (see Appendix 5), which indicates that the reliability of the tests were moderate to high. The fact that, the tests were created on the basis of valid standardized tests in another transparent language (Finnish) accords additional strength to the test tools. Aro and Björn's (2015) questionnaire on teacher knowledge and February's (2018) questionnaire and test tools of Afrikaans language also helped in constructing fairly comparable test items. The next step the researcher sees fit would still, however, be to validate the test measures so that they could be standardised and used by other researchers of the language, in the future.

The second limitation of this study is that, most of the measures did not feature normal distributions. However, skewed distributions in this specific study, although not desirable in statistical terms, reveal the realistic situation regarding the children's reading and spelling abilities and their development as well as the teachers' conceptual knowledge. They ought, therefore, not to be discredited, but rather regarded as informative and instrumental in guiding interventions and further research.

The first phase of the empirical study also had fewer test items in general, and in particular, measures used in Grade 1. More items could have made the study stronger and the results more reliable. This limitation was addressed in the measures in Grade 2, as the number of items in the tests were increased. A replica research of this study and design needs to be done with more items and more longitudinally for example, from pre-primary grade to Grade 3, in order to follow children's literacy skills development for the whole Junior Primary phase. This will provide more understanding to teachers and educators on how children develop reading and spelling skills and confirm or disapprove the results of the present thesis. The present study also did not collect information on the home literacy environment of the children to determine how much the children knew already before they started school. Future research should investigate the home literacy environment of children to determine the amount of variance that it contributes to reading and spelling skills development during the early school years. Further research involving an intervention study that helps to improve children's reading and spelling skills in Oshikwanyama also needs to be explored. Another area of future research emanating from this thesis, would be to examine Oshikwanyama language orthography and to confirm a model fit for its instruction.

For Part II, although the teacher questionnaire was quite comprehensive, the teachers' study also had some limitations. The first limitation was that,

teachers' knowledge could not be linked or compared to the children's skills. This was an oversight on the researcher's side, during the data collection period, to link the specific teachers to the specific children that they taught. It was also later obvious that the teachers who participated in the research, that is, the teachers of the children who were tested (from the five schools), were also, in actual fact, few and a comparability test, could, perhaps, not reach statistical significance. Future research should be able to link the teachers' data to the children's in order to determine whether the teachers' knowledge in specific literacy concepts reflects the children's level of development of literacy skills in that specific aspect.

Another limitation was that, although Part 2 of the teacher questionnaire tested content knowledge of the teachers as a test situation would, a questionnaire is in general, a self-reporting tool as could be seen in Part 1 and 3. In other words, answers are based on the respondent's own reflection. It would have provided more realistic and valid results had I done classroom observations of the teachers' literacy instruction strategies, rather than to merely let them tell about it in a questionnaire. This would be the future direction of the research. In order to find a suitable model for literacy instruction in a transparent orthography such as Oshikwanyama language, an extension of this study also needs to be done.

7 CONCLUSIONS

The present thesis discussed the development of reading and spelling skills of children learning Oshikwanyama language in Namibia, from Grade 1 to Grade 2. To bring everything together, a description of the knowledge of teachers on literacy instruction and language structure of Oshikwanyama language was provided.

Based on the findings of the thesis, it can be concluded that in learning to read and spell Oshikwanyama language, foundation skills of literacy such as phonemic awareness, letter knowledge and rapid naming are necessary too, as they were associated with reading and spelling in the first two years of school. The effect of letter knowledge on reading and spelling was not direct, but through phonemic awareness and RAN. Other studies on transparent languages have shown this trend (Torppa, Poikkeus, Laakso, Eklund, & Lyytinen, 2006). Close association between letter knowledge and phonemic awareness is confirmed in this study. Reading and spelling are closely linked skills, but reading developed slightly more rapidly. Overall, children's development of reading and spelling skills in the first two years lagged behind other transparent languages, so there is need for intervention measures. Similarly, Junior Primary teachers' knowledge of recent literacy instruction concepts requires capacity building, particularly in in-service and experienced teachers. Recent teacher training curriculum in local languages could be on the right track, but aspects such as phonological awareness need to be strengthened.

Pre-Primary education is important in learning to read and spell, so is starting school at the right age. Overall, the pathways of learning to read and spell Oshikwanyama language have shown similarities with other transparent orthographies such as the Finnish language. However, the pace of development of children's skills was much slower in Oshikwanyama compared to Finnish children who achieve reading accuracy by the end of the first semester of first grade (Lerkkanen et al., 2004). More scientific studies are needed to understand the acquisition and development of early literacy skills in Oshikwanyama language in order to facilitate a faster literacy learning process as should be in a transparent orthography.

YHTEENVETO

Tämä väitöskirja koostuu kahdesta osasta. Ensimmäisessä osassa tarkastellaan oshikwanyamankielisten lasten luku- ja kirjoitustaidon oppimista alkuopetuksen aikana rakenteeltaan säännönmukaisessa oshikwanyaman kielessä. Toisessa osassa tarkastellaan esi- ja alkuopettajien ja opettajaksi opiskelevien tietoja oshikwanyaman kielen rakenteesta ja lukemaan opettamisesta tällä paikalliskielellä.

Ensimmäiseen tutkimukseen, jossa tarkasteltiin luku- ja kirjoitustaidon valmiuksia ja taitojen kehitystä, valittiin satunnaisotannalla 150 oppilasta viidestä koulusta Ohangwenan koulupiiristä Pohjois-Namibiasta. Koulun alkaessa oppilailta testattiin fonologinen tietoisuus, kirjaintuntemus ja nimeämisnopeus. Ensimmäisen ja toisen kouluvuoden lopussa oppilailta testattiin fonologinen tietoisuus, kirjaintuntemus, nimeämisnopeus, dekoodaustaito, oikeinkirjoitus, lukusujuvuus, luetun ymmärtäminen ja työmuisti. Ensiksi tarkasteltiin, missä määrin kielellinen tietoisuus, kirjaintuntemus ja nimeämisnopeus 1. luokan alussa ennustavat dekoodaus- ja oikeinkirjoitustaitoa oshikwanyaman kielessä 1. luokan lopussa. Toiseksi selvitettiin, missä määrin dekoodaus- ja oikeinkirjoitustaidon kehitys oshikwanyaman kielessä on vastavuoroista.

Tulokset osoittivat, että lukemisen valmiudet sekä luku- ja kirjoitustaito olivat oppilailla yleisesti ottaen heikkoja sekä ensimmäisen luokan alussa että lopussa. Lukemisvalmiuksista fonologinen tietoisuus, kirjaintuntemus ja nimeämisnopeus 1. luokan alussa ennustivat dekoodaus- ja oikeinkirjoitustaitoa 1. luokan lopussa, tosin kirjaintuntemus ennusti näitä taitoja epäsuorasti fonologisen tietoisuuden ja nimeämisnopeuden kautta. Dekoodaus- ja oikeinkirjoitustaito kehittyivät vahvasti vastavuoroisesti 1. ja 2. luokan aikana vaikkakin dekoodaustaito kehittyi nopeammin kuin oikeinkirjoitustaito. Ensimmäisen luokan lopussa mitattu dekoodaustaito ennusti dekoodausta ja lukusujuvuutta 2. luokan lopussa. Oikeinkirjoitus 1. luokan lopussa ennusti oikeinkirjoitusta, luetun ymmärtämistä ja työmuistia 2. luokan lopussa. Sen sijaan dekoodaustaito ei ollut yhteydessä luetun ymmärtämiseen tai muistiin 1. eikä 2. luokalla, kun taas lukusujuvuus oli yhteydessä oikeinkirjoitukseen ja luetun ymmärtämiseen. Luetun ymmärtäminen ja työmuisti korreloivat keskenään.

Toisessa osassa tarkasteltiin kyselyn avulla 153 esi- ja alkuopetuksen (junior primary school) opettajan tietoja oshikwanyaman kielen fonologisesta ja morfologisesta rakenteesta sekä lukemaan opettamisesta tällä kielellä. Vastaajat jakautuvat kolmeen ryhmään: opettajaopiskelijat, täydennyskoulutuksessa olevat opettajat ja kokeneet opettajat. Tutkimuksessa tarkasteltiin, missä määrin opettajien koulutus, kokemus ja tiedot olivat yhteydessä toisiinsa.

Tulokset osoittivat, että suurin osa vastaajista oli saanut koulutusta esi- ja alkuopetuksen opetuksesta (86.70 %) sekä koulutusta opettaa luku- ja kirjoitustaitoa oshikwanyaman kielellä (74.20 %). Monet opettajista olivat saaneet koulutusta myös koskien erilaisia lukemaan ja kirjoittamaan opettamisen menetelmiä, äännepohjaisia lukemaan opettamisen menetelmiä ja fonologista tietoisuutta. Koulutuksen määrä ja laatu kuitenkin vaihtelivat suuresti. Opettajaopiskelijat

olivat saaneet todennäköisimmin koulutusta kaikilla sisältöalueilla, kun taas täydennyskoulutuksessa olevat opettajat ja kokeneet opettajat olivat saaneet hyvin vähän tai ei lainkaan koulutusta näistä sisällöistä. Tulokset osoittivat, että kaikissa opettajaryhmissä oli tiedoissa puutteita koskien oshikwanyaman kielen fonologista ja morfologista rakennetta, luku- ja kirjoitustaidon peruskäsitteitä sekä lukemaan opettamisen menetelmiä ja stra- tegioita. Vaikka kielen tavurakenteen tuntemus oli kaikilla kohtuullisen hyvä, siinä oli opettajaryhmien välillä myös eroja. Lisäksi ryhmien välillä oli eroja oshikwanyamankielisten sanojen bigrafien tuntemuksessa, morfologian tuntemuksessa, luku- ja kirjoitustaidon käsitteiden tuntemuksessa sekä tiedoissa koskien lukemaan opettamisen menetelmiä ja strategioita oshikwanyaman kielellä. Ainoastaan fonologisessa tietoisuudessa ei ryhmien välillä ollut tilastollisesti merkitseviä eroja.

Lisäksi havaittiin yhteyksiä opettajien koulutuksen ja tietojen välillä. Esi- ja alkuopettajan koulutus oli yhteydessä parempaan oshikwanyaman kielen tuntemukseen, parempiin tietoihin fonologisen tietoisuuden opettamisesta sekä luku- ja kirjoitustaidon ja äännepohjaisen lukemaan opettamisen sisällöistä. Jos opettaja oli saanut esi- ja alkuopettajan koulutuksen, oli todennäköisempää, että hän oli saanut koulutusta myös oshikwanyaman kielen rakenteesta, ja jos hän oli saanut koulutusta oshikwanyaman kielen rakenteesta, niin hän oli todennäköisemmin saanut koulutusta myös oshikwanyaman kielen luku- ja kirjoitustaidon, kirjain- äännevastaavuuden ja fonologisen tietoisuuden opetuksessa.

Toisaalta mitä korkeampi koulutus ja pidempi työkokemus opettajilla oli, sitä vähemmän heillä oli koulutusta esi- ja alkuopetuksen opetuksesta, oshikwanyaman kielen opetuksesta, luku- ja kirjoitustaidon opettamisesta, äännepohjaisista lukemaan opettamisen menetelmistä ja fonologisen tietoisuuden opetuksesta oshikwanyaman kielessä. Heillä oli myös heikommat tiedot oshikwanyaman kielen tavuista, morfologiasta, luku- ja kirjoitustaidon käsitteistä sekä lukemaan opettami- sen menetelmistä ja strategioista.

Väitöskirja tarjoaa useita käytännön johtopäätöksiä siihen, millaisia lukemisen valmiuksia lapset tarvitsevat ennen koulun alkua ja mitä opettajien perus- ja täydennyskoulutuksessa tulisi jatkossa painottaa. Oshikwanyamankielisten lasten kouluopetuksen tavoitteena tulee olla se, että jokainen lapsi oppii kirjain-äännevastaavuuden ja riittävän dekoodaustaidon ensimmäisen luokan loppuun mennessä. Opettajankoulutuksen opetussuunnitelman tulisi painottaa enemmän fonologisen tietoisuuden kehityksen ja sen tukemisen merkitystä esi- ja alkuopetuksessa sekä luku- ja kirjoitustaidon kehityksen vastavuoroisuuden ymmärtämistä ja soveltamista opetuksessa. Kokeneet opettajat ja täydennyskoulutuksessa olevat opet- tajat tarvitsevat lisää tietoa oshikwanyamankielisten lasten luku- ja kirjoistustaidon opetuksesta, luku- ja kirjoitustaidon sisällöistä ja käsitteistä, fonologisesta tietoisuudesta, oshikwanyaman kielen fonologisesta ja morfologisesta rakenteesta ja sen yhteydestä lukutaidon opetukseen.

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APPENDICES

APPENDIX 1: NOUN CLASSES IN OSHIKWANYAMA LANGUAGE

Noun Class	Prefix (singular/ plural)	Example	Words in noun class indicate:
1.	omu- ova-	omunhu ovanhu	people/human beings
1a.	- oo-	tate, Nangula ootate, ooNangula	people/family relations, proper nouns, personified names
2.	omu- omi-	omuti omiti	plants/ trees, tools, etc.
3.	e- oma-	etemba omatemba	tools, vehicles/machines, fruit names, liquids, scary animals etc.
4.	oshi- oi-	oshinima oinima	things, animals, manner of talking, behaviour, nominative gender, nationality characteristics etc.
5.	o- ee-	ongobe eengobe	animals, fruit, loan words e.g. oradio = eeradio
6.	olu- omalu- ee-	olukaku. olunguto omalukaku, omalunguto eenghaku, eenguto	kitchen utensils, clothing, small and long things etc.
7.	oka- ou-	okakambe oukambe	diminutive form
8.	ou- omau-	oudjuu omaudjuu	abstract nouns
9.	oku- omaku-	okutwi omakutwi/ omatwi	body parts etc.
10.	p(o/u)-	pomulonga komulonga momulonga	locative nouns
11.	k(o/u)-		
12.	m(o/ u)-		

(Adapted from Hasheela, 1985)

APPENDIX 2: DISTRIBUTIONS OF MEASURES IN PART I

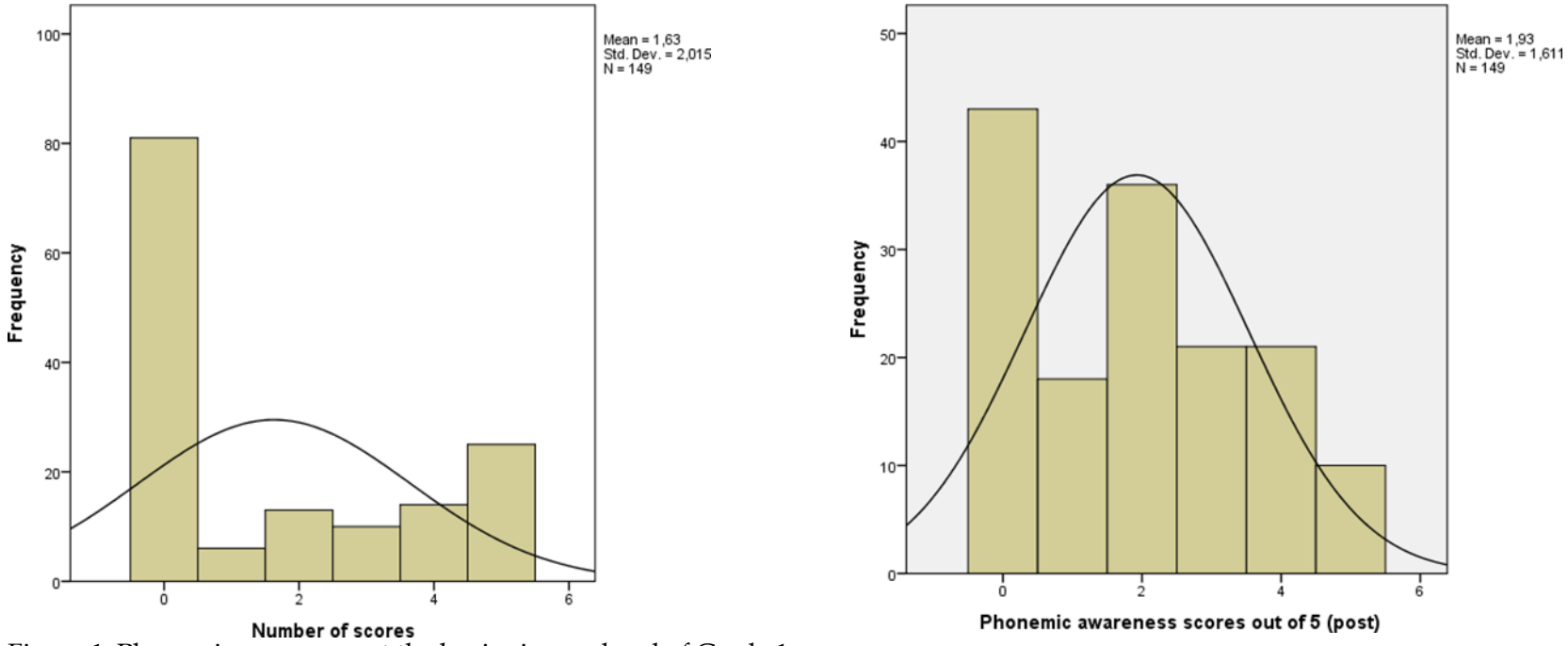
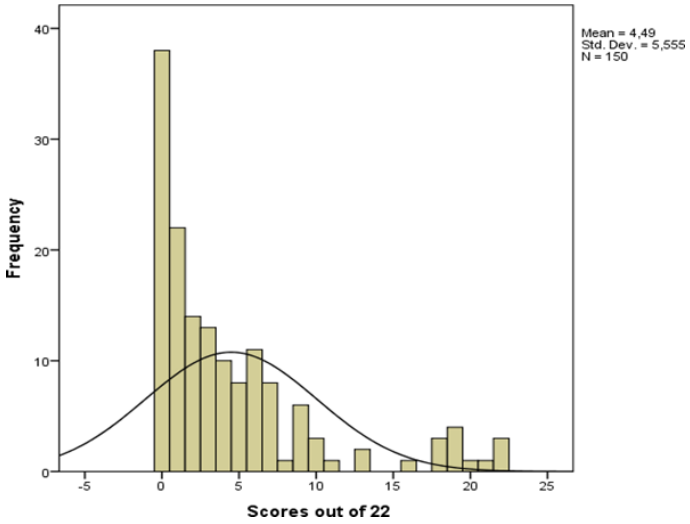
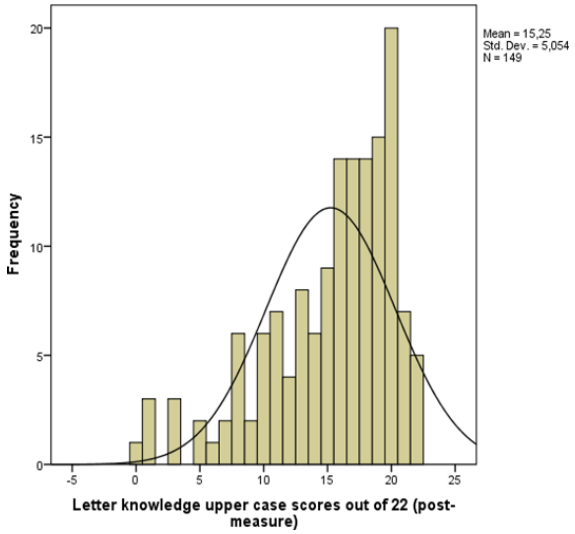


Figure 1. Phonemic awareness at the beginning and end of Grade 1





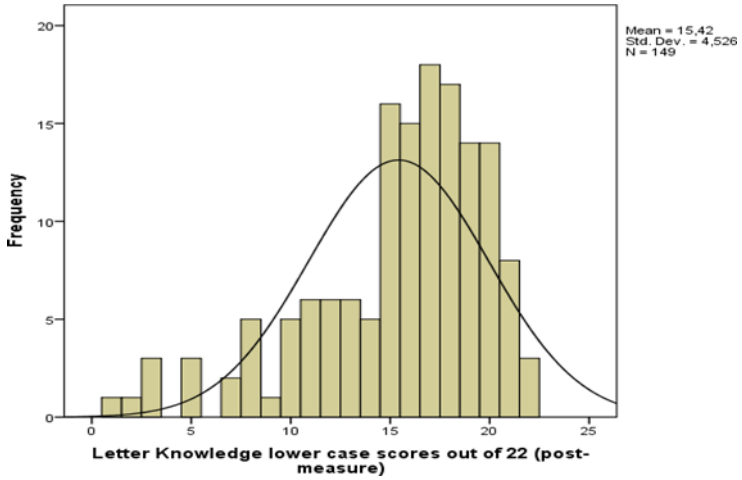


Figure 2. Letter knowledge at the beginning and end of Grade 1

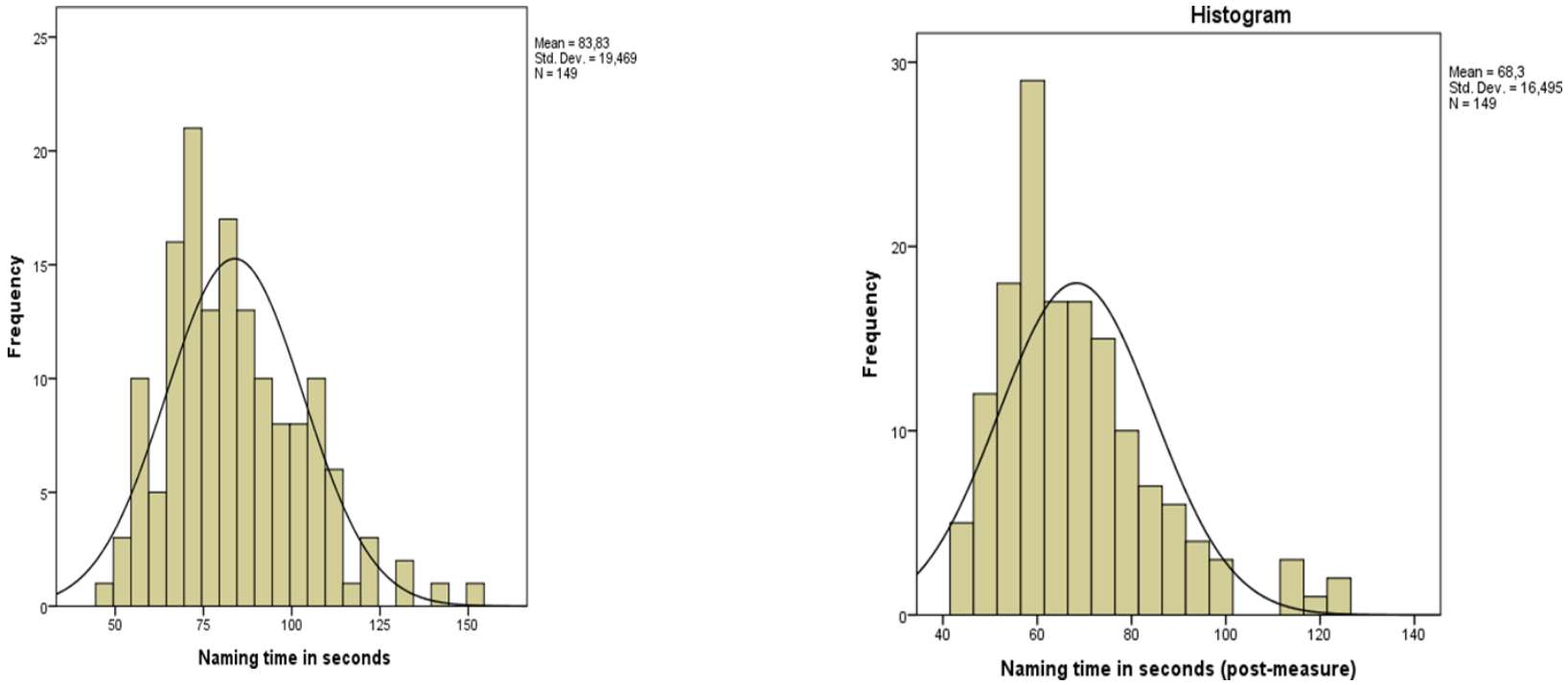


Figure 3. RAN Objects at the beginning of Grade 1 and end of Grade 1

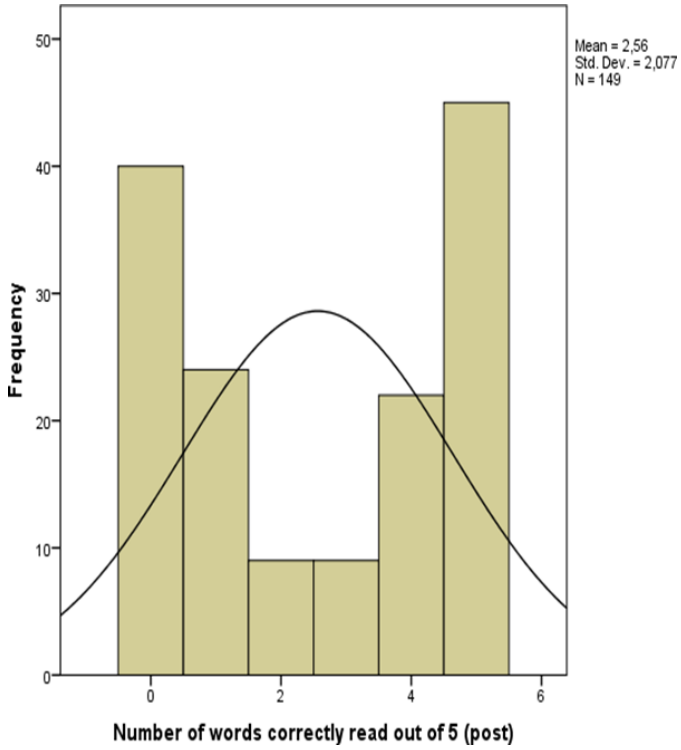


Figure 4. Decoding at end of Grade 1

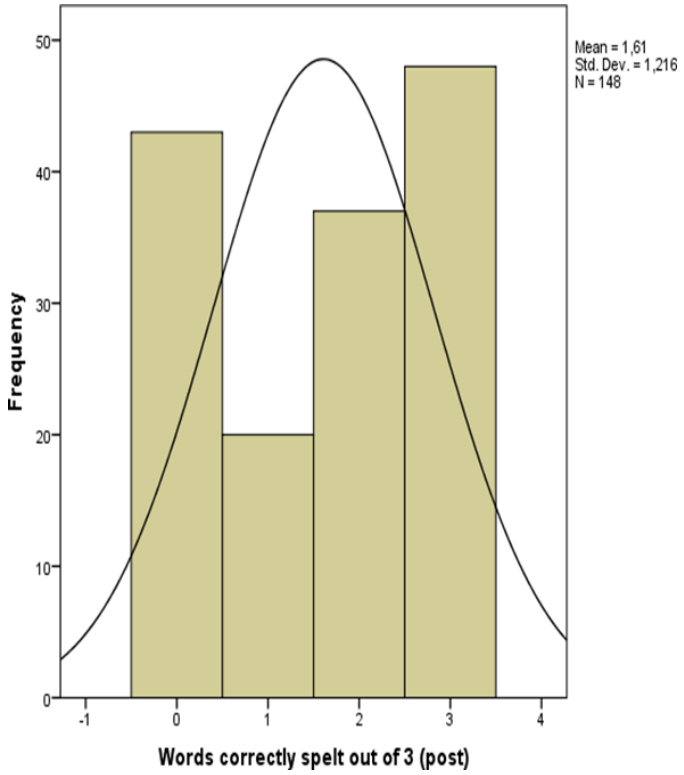


Figure 5. Spelling at end of Grade 1

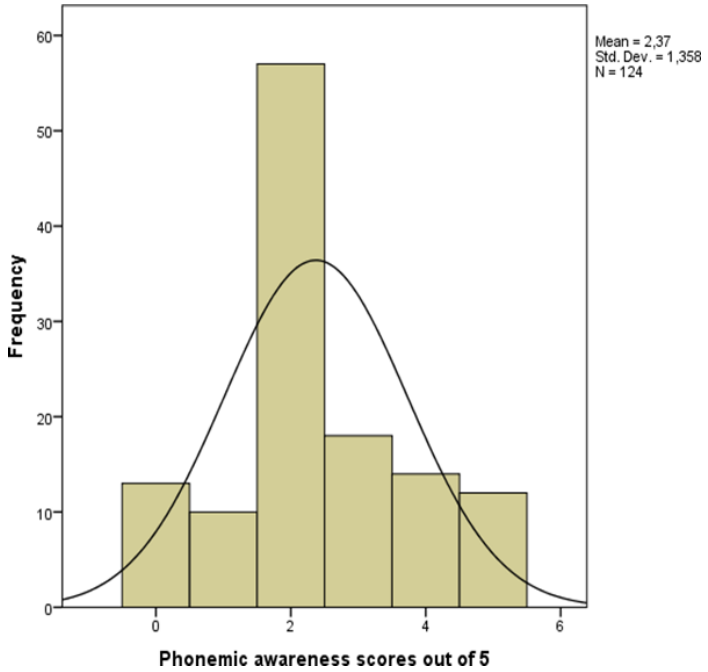


Figure 6. Phonemic awareness at end of Grade 2

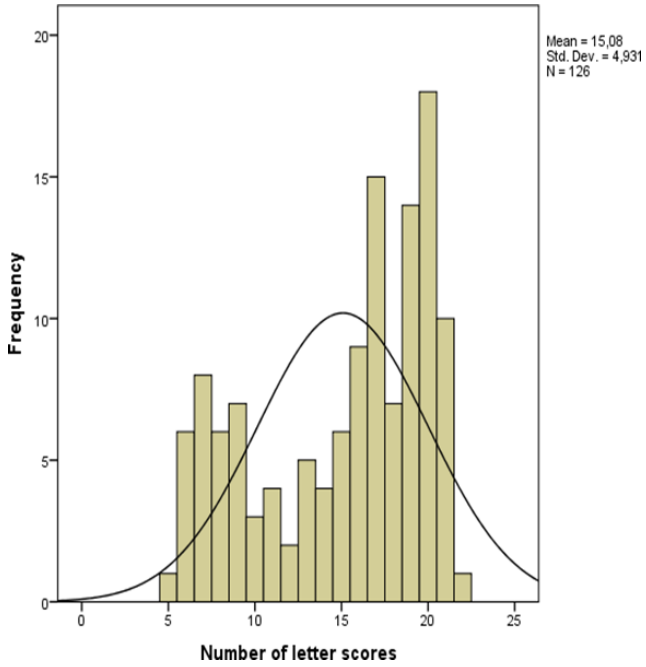


Figure 7. Letter knowledge at end of Grade 2

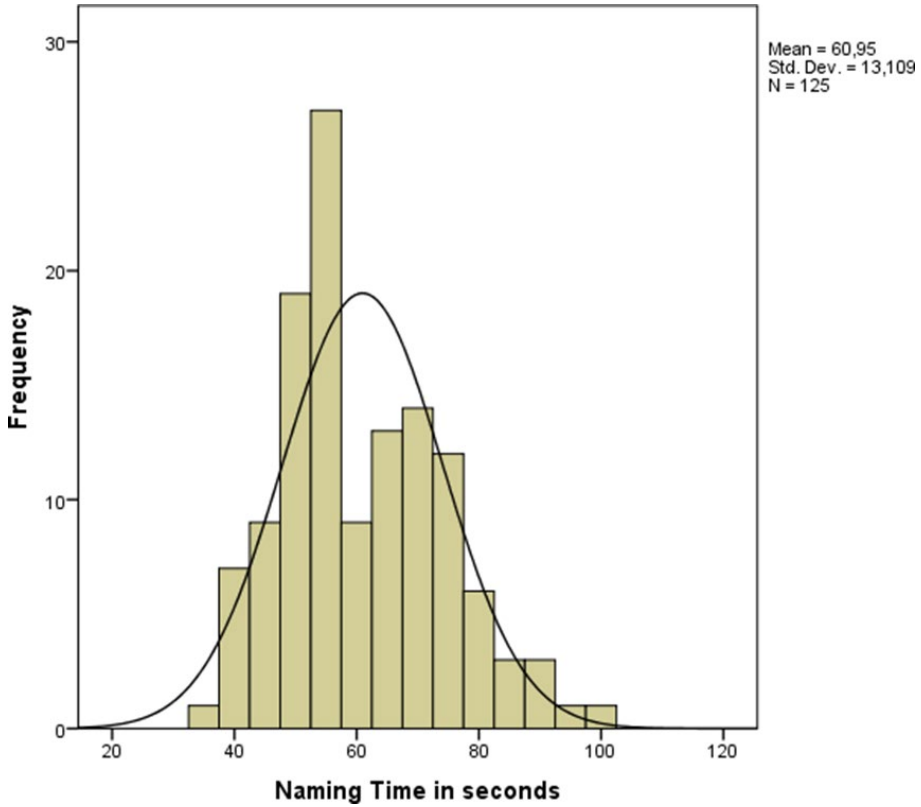


Figure 8. RAN at end of Grade 2

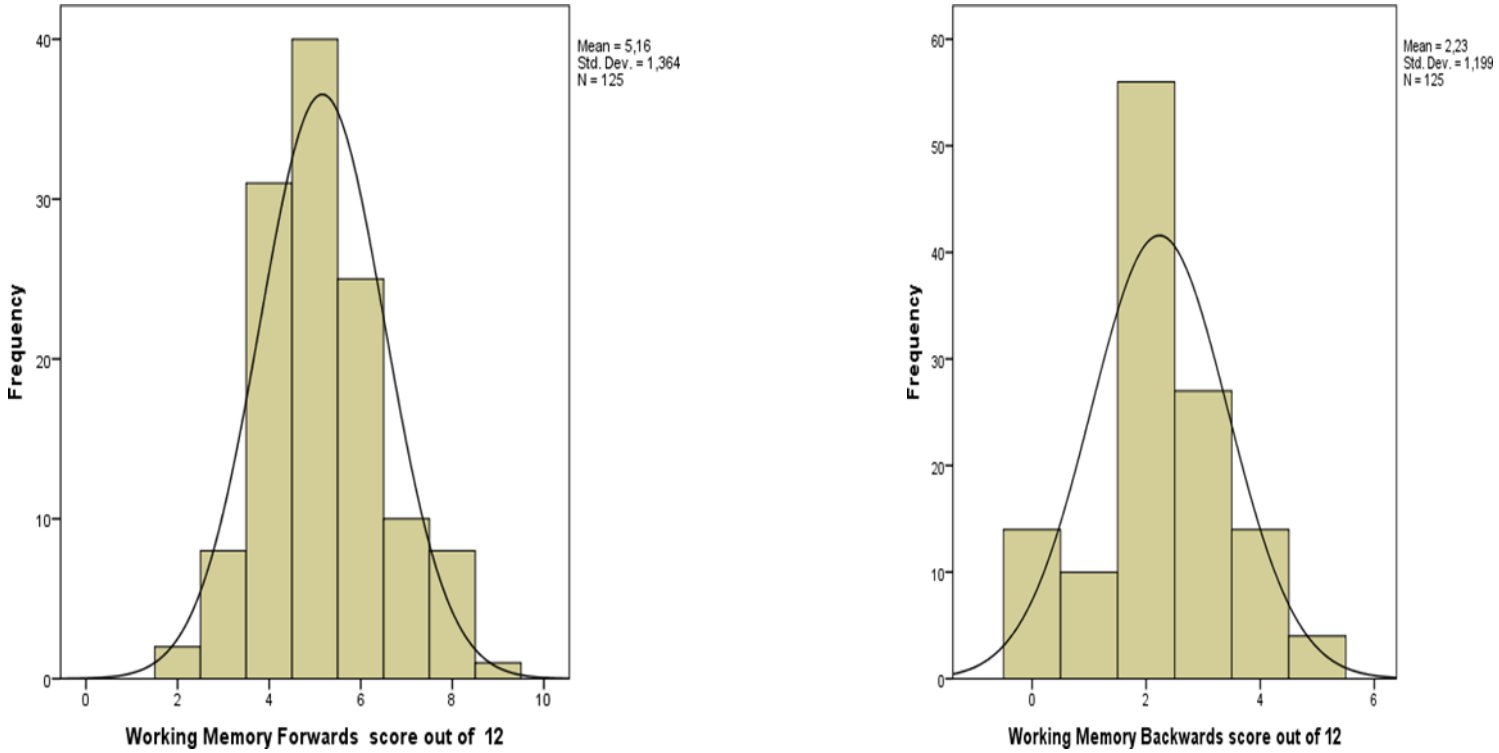


Figure 9. Working memory distributions at end of Grade 2

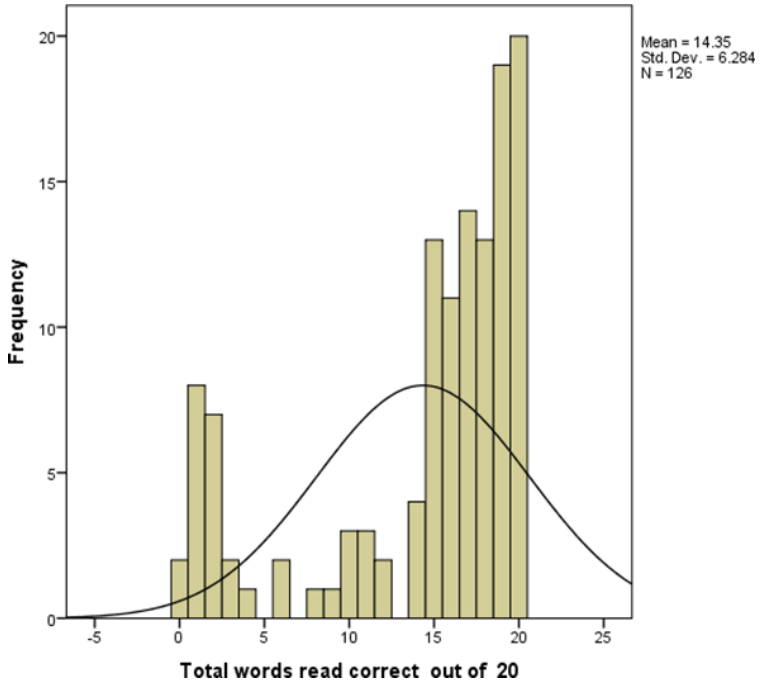


Figure 10. Decoding measure distribution at end of Grade 2

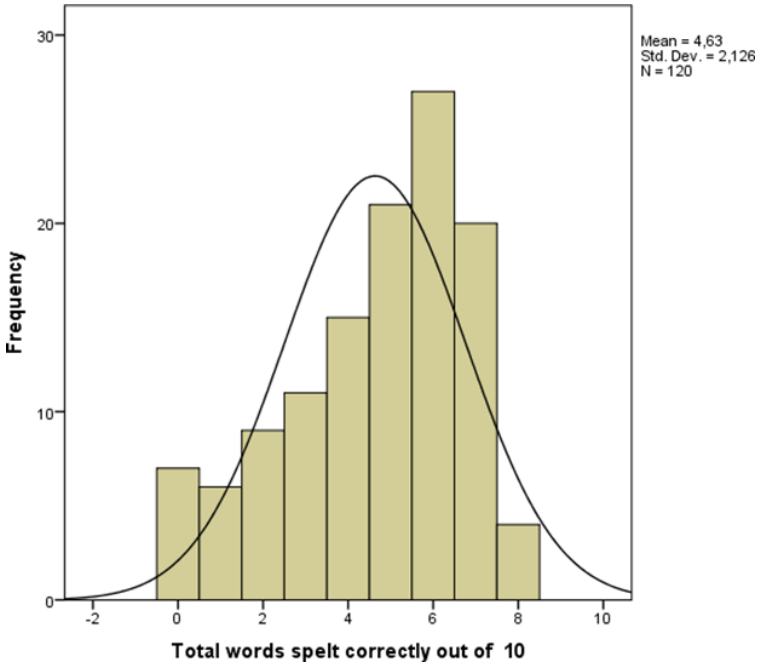


Figure 11. Spelling measure distribution at the end of Grade 2

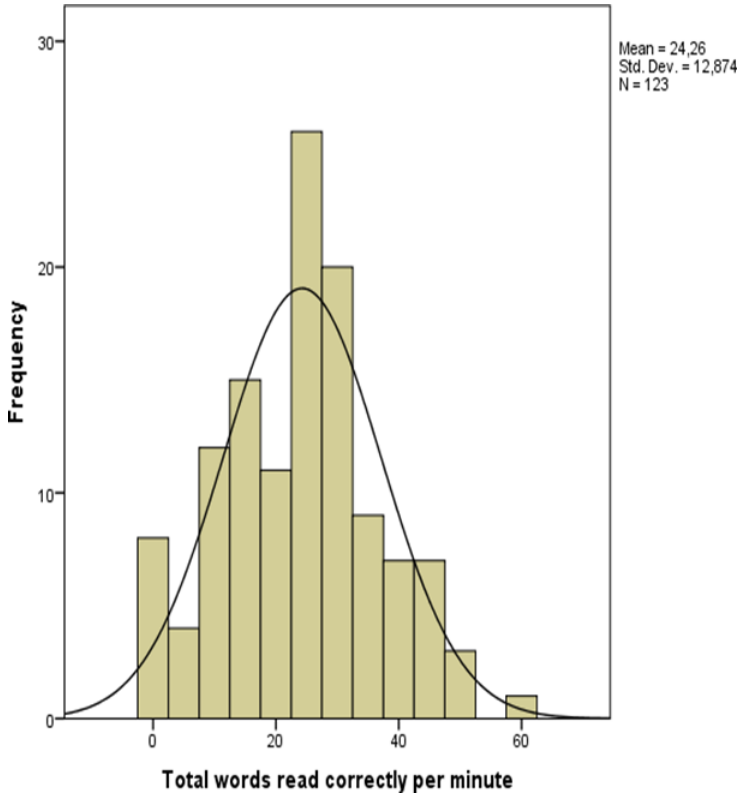


Figure 12. Fluency measure distribution at end of Grade 2

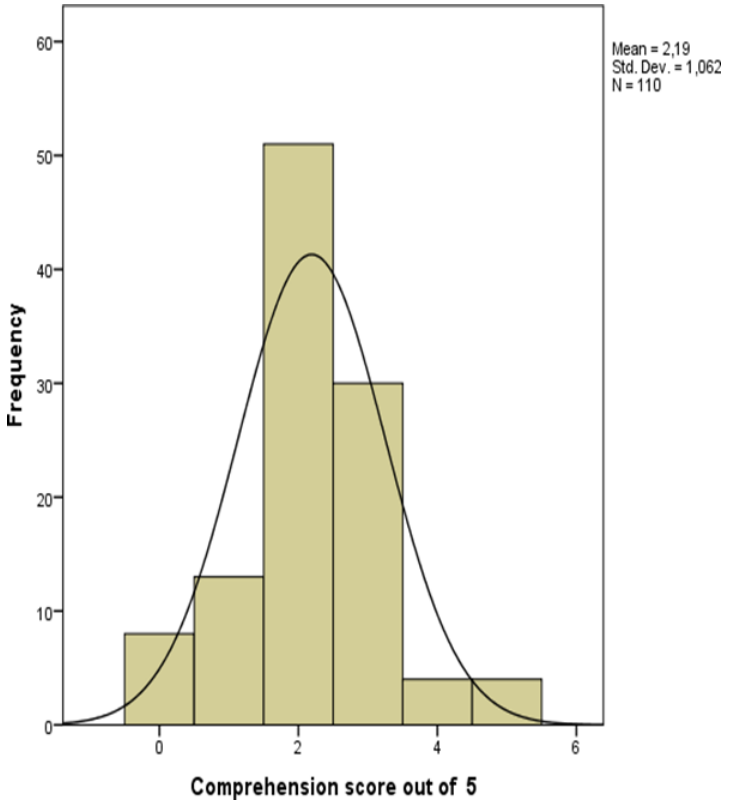


Figure 13. Comprehension measure distribution at end of Grade 2

APPENDIX 3: TEST MEASURES

Task 1. EUDEKO LOMAWI /PHONEMIC AWARENESS

Pwilikina nawa koitya tai shikula ndee to lombwele nge **ewi lopetameko** u udite moshitya keshe.

*Listen carefully to the following words and tell me the **first sound** that you hear in each word.*

School Code	**Child's Code**			
		1. meme /*mmmmm*/		
		2. tate /*t*/		
		3. eta /*e*/		
		4. ame /*a*/		
		5. pedu /*p*/		
		Omawi e li mondjila: Sounds correct:	**5**	

Phonemic awareness word list: (3 consonants, 2 vowels)

1. mother
2. father
3. bring
4. me /I
5. down

Task 2. ESHIIVO LEENDADA / LETTER KNOWLEDGE

ON-DO-DO 1	OMUPE–KAPE–KI:	OVAHONGWA Okoode yomuhongwa											
		1	2	3	4	5	6	7	8	9	10	11	12
OKOODE YOFIKOLA:	EFIKU:												
	A a												
	B b												
	D c												
	E e												
	F f												
	G g												
	H h												
	I i												
	J j												
	K k												
	L l												
	M m												

	N n												
	O o												
	P p												
	S s												
	T t												
	U u												
	V v												
	W w												
	X x												
	Y y												
OITWA / 22													

Task 3. OKULUKA KWOMEENDELELO (OINIMA) RAN (OBJECTS)

GL workshop Swakopmund Namibia 4.–6.3.2013, Naming skills, Salmi, NMI

A THE RAN TEST INSTRCUTIONS

'You are going to name ALL these things you see as fast as you can without making mistakes. First, tell me, slowly, the names of each of these first five things (Examiner points to each one until child responds with a name for it). Good. Now go back to the first one and when I say 'Go', name every single thing you see across this row (Examiner sweeps finger across row 1) and this (again examiner sweeps finger across row 2)…etc. until you come to the very last one on the page. If you make an error, correct it. You can use a finger while naming if you want to. Remem- ber to be FAST and ACCURATE. O.K. Get ready, get set, Go.'

(Start the stopwatch. Write down the errors of the child to the score sheet. Stop the stopwatch after the child has named the last item.)

If during the untimed naming of the first five items the child names items uncorrect- ly, tester gives him the correct names for items.

ASSESSMENT:

TIME (main measure): The total naming time will be measured and compared to norms.

ERRORS (optional measure): The amount of errors will be counted. Count the amount of 1) self-corrected errors, 2) non-corrected errors, and 3) total amount of errors (self-corrected + non-corrected errors). Compare the amount of errors to norms (if any).

Self-corrected errors: child corrects error spontaneously ('table …no…chair'- chair)

Non-corrected errors: child doesn't correct his error ('table'- chair); also leaping over, repetition, return

B. RAN (OBJECTS) PICTURES

C. RAN (OBJECTS) RECORDING SHEET

Okoode yomuhongwa	Edina lomuho ngwa	Eedula	Oukashike-ko-oka-nhu	Okuluka kwom-eendelelo meesek-onde (in seconds)	Omapuko	Ya nhukwa po	Omapukululo omunhu mwene
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Task 4. OKUPATULULA OITYA/OKULESHA (DECODING)
(End of Grade 1)

1. fa
2. okwa
3. etango
4. okambishi
5. omushamane

Task 5. ESHIPELO (SPELLING)
(End of Grade 1)

Omupekapeki ota tumbula/lesha oitya vo ounona tava shange.
The researcher dictates words and the children write them down.

1. eta
2. kala
3. ongobe

SPELLING SHEET

	Okoode yokaana/ Child's Code:
1	
2	
3	
4	
5	

Task 6. WORKING MEMORY FORWARDS AND BACKWARDS

Short term memory and working memory task
a. Instructions
Read to the learner the digits at the rate of **1 digit/second**

SHORT TERM MEMORY TASK
Part I: Learner is asked to repeat the digits in the same order. (forwards)
(You will say ″2-5″ and the learner repeats ″2-5″). Write down the answer.
If the learner fails in both items in the same block (e.g. 3-5-7, and 2-6-3),
you stop the task.

WORKING MEMORY TASK
Part II: Learner is asked to repeat the digits backwards, from the last one to the first one. (You will say ″2-5″ and the learner answers ″5-2″). If the learner fails in both items in the same block, you stop the task.

SCORING
Task score is the sum of the correct items in both tasks.
Part I task Forwards gives **Short Term Memory Score**.
Part II Backwards gives **Working Memory Score.**

b. Scoring sheet for the assessor

SHORT TERM AND WORKING MEMORY TASK

Name of the learner: _____ Gender: Girl/Boy
Date of birth: _____ Age in years: _____
Name of the school:_____Date: _____
Name of the assessor: _____

ITEMS	FORWARDS	BACKWARDS
2 - 5 6 - 1		
3 – 5 – 7 2 - 6- 3		
4 - 8 – 2 – 1 7- 3 - 5 - 9		
8 – 2 – 3 – 6 - 1 3 – 9 - 2 - 4- 7		
7 – 3 – 1 – 5 – 4 - 2 2 - 5 - 3 - 7 – 1 -8		
4 – 2 – 8 – 4 – 5 – 3 -9 8 – 3 – 1 – 4 – 5 – 2 -9		
Total	**/12**	**/12**

Task 7. DECODING LIST
(End of Grade 2)

1. fa
2. vo
3. lya
4. ila
5. meme
6. okwa
7. ndele
8. etango
9. ondjala
10. hehema
11. eenghaku
12. dedauka
13. kendabala
14. xuxumukwa
15. ngungumana
16. pyakudukwa
17. onhyololola
18. okanghwenyenye
19. omusholondodo
20. oshinakuwanifwa

Task 8. Eshipelo/Ondeshela (Spelling list)
(End of Grade 2)

1. ye
2. eka
3. hafa
4. omhya
5. yelula
6. ondjema
7. dimbulukwa
8. mumwameme
9. onhyololola
10. okanghwenyenye

SPELLING SHEET

	Onomola yokaana/ Child's Code:
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Task 9. OKALESHWA KOMUFENU/FLUENCY TEXT
(End of Grade 2)

Oudila

Oudila ounamwenyo va hokwifa. Oudila vahapu ohava tuka. Ohava tungu oihadi yavo komiti nomomwiidi. Ohava tungu nakeshe osho va mono ngaashi: omwiidi, oiti, outai vomiti, omundele, eembapila naikwao. Vo ovanyakwa nokutunga.

Oudila ohava nangele omai moihadi yavo. Oudilona ohava tendulwa momai ngee efimbo la fiki. Oudilona ohava kala nooina moshihadi fiyo va kula tava dulu okutuka noku ka tunga oihadi yavo vene. MOwambo omu na oudila vahapu, ngaashi ooNamusheshe, ooFifi, ooHanda, eenghuti, oshiyandja, ooTena, eexwiloli, ooNamungha, ooKola, ooKaimbi, navakwao vahapu.

Namusheshe okadila katilyana, haka tungile koilya. Pefimbo loilya i li momapya ohaka kala taka weelele momapya. Fifi okadila kanini, ke na oluvala limbulau. Oke hole okulya oilya ngee i li poipale nohaka kala ka telwa eemwiyo poipale koumatyona. Handa okadila ka lungudja noka lungama alushe kaha yashwe. Tena naye yoo oku holike okuyashwa koumatyona, ashike oku na oinheya. Iha tuka ta i kokule, ashike ito mu yashe noupu.

Eshi oshiyandja ohashi tuka mongudu youdila vahapu nohashi kala momano. Ohashi tuka nee oshita tashi di momano sha yuka moilya. Onghuti nayo okadila ke holike kounona nohaka telwa momano, poipale nomomidingonoko deumbo. Kola odila ilaula i na evala litoka pombuda, noku hole okuvaka eedingu komileko, omanga Kaimbi oku na oluvala leimbi, noha vakula po ouxuxwena pooina.

Oitya: 204

Researcher's recording sheet

Oudila ounamwenyo va hokwifa. Oudila vahapu	6
ohava tuka. Ohava tungu oihadi yavo komiti	13
nomomwiidi. Ohava tungu nakeshe osho va mono	20
ngaashi: omwiidi, oiti, outai vomiti, omundele,	26
eembapila naikwao. Vo ovanyakwa nokutunga.	31
Oudila ohava nangele omai moihadi yavo.	37
Oudilona ohava tendulwa momai ngee efimbo la	44
fiki. Oudilona ohava kala nooina moshihadi fiyo va	52
kula tava dulu okutuka noku ka tunga oihadi yavo	61
vene. MOwambo omu na oudila vahapu, ngaashi	68
ooNamusheshe, ooFifi, ooHanda, eenghuti, oshiy-	72
andja, ooTena, eexwiloli, ooNamungha, ooKola,	76
ooKaimbi, navakwao vahapu.	80
Namusheshe okadila katilyana, haka tungile	85
koilya. Pefimbo loilya i li momapya ohaka kala	93
taka weelele momapya. Fifi okadila kanini, ke na	101
oluvala limbulau. Oke hole okulya oilya ngee i li	110
poipale nohaka kala ka telwa eemwiyo poipale	117
koumatyona. Handa okadila ka lungudja noka	123
lungama alushe kaha yashwe. Tena naye yoo oku	131

holike okuyashwa koumatyona, ashike oku na oinheya. Iha tuka ta i kokule, ashike ito mu yashe noupu. Eshi oshiyandja ohashi tuka mongudu youdila vahapu nohashi kala momano. Ohashi tuka nee oshita tashi di momano sha yuka moilya. Onghuti nayo okadila ke holike kounona nohaka telwa momano nomomidingonoko deumbo. Kola odila ilaula i na evala litoka pombuda, noku hole okuvaka eedingu komileko, omanga Kaimbi oku na oluvala leimbi, noha vakula po ouxuxwena pooina.	137 147 153 159 168 175 180 189 195 203 204

Oitya ya leshwa aishe kumwe/No. of words read	
– Oitya ya nhukwa po/ No. of words omitted	
– Omapuko a ningwa/ No. of errors	
= **Oitya ya leshwa mondjila/ No. of words correctly read**	

Task 10. OKALESHWA KEUDEKO (READING COMPREHENSION TEXT)

Odibo yaTatekulu

Tatekulu Haufiku okwa kulupa. Ye oku na odibo yaye yomutwe. Okwe i pewa omaano kovatekulu vaye. Odibo yaTatekulu ihai fyaala po. Okwe i luka ta ti 'omaulu aye'. Efiku limwe Tatekulu okwa dimbwa po odibo yaye. Okwa lombwela omutekulu waye Penda ta ti: "Penda inda u ka tale omaulu ange wani ! Onda hala okuya kongeleka". Penda okwa li a limbililwa. Okwa kala ashike a pwaalala a tala tatekulu. Meekulu Mukwahongo okwa dja ko ta endelele a eta odibo yatatekulu. Okwa ti: ''Omaulu oye oyaa wani, okwa li we a dimbwa po". Tatekulu okwa tala kuPenda te limemesha ta ti: ''Itu yeni nee kongeleka wani, omaulu ange okwe ya''.

1. Edina latatekulu olyelye? (1)
2. Ovaneumbo ava okwa li tava i peni? (1)
3. 'Okulimbililwa' otashi ti ngahelipi? (1)
4. Omolwashike mbela tatekulu a luka odibo yaye kutya oyo omaulu aye? (1)
5. Omolwashike mbela Penda kwa li ashike a pwaalala ta tale ku-tatekulu? (1)

Grandfather's cane

Grandfather Haufiku is old. He has a cane. He got it as a gift from his grandchildren. Grandfather's cane does not stay behind. He calls it 'his legs'. One day, grandfather forgot his cane in the house. He said to his grandson Penda: "Penda go and get my legs from the house! I want to go to church". Penda was confused. He was just staring at grandfather. Grandma Mukwahongo came carrying grandpa's cane. ''Here are your legs, you forgot them in the house", she said. Grandpa smiled at Penda and said, "let's go to church, my legs are here now."

1. What is grandfather's name? (1)
2. Where was the family going? (1)
3. What does it mean to be 'confused'? (1)
4. Why do you think grandfather called his cane 'his legs'? (1)
5. Why do you think Penda was confused and just staring at grandfather? (1)

/5/

APPENDIX 4. TEACHER QUESTIONNAIRE ON OSHIKWANYAMA LANGUAGE LITERACY IN- STRUCTION AND LANGUAGE CONSTRUCTS

Ovahongi ovaholike,
Elalakano lombapilapekapeko ei okukonga ouyelele tau kwafele mokuuda ko kutya elongo lokulesha nokushanga elaka lOshikwanyama pEendodo dopetameko ola kwatela mo naanaa shike. Otwa hala yo okutala nge, ovahongi ohava pewa ngaho eshiivo, ounongo nowino ya wana oku ka longa okulesha nokushanga Oshikwanyama, pefimbo tava deulilwa ouhongi. Eshi otashi ka kwafela edeulo letu lovahongwahongi lOshikwanyama, poUnivesiti yaNamibia, nonghene hatu dulu okuxwepopaleka edeulo letu mOshihongwa sha tya ngaha. Oto indilwa nee nelininipiko, u kufe ominute don- humba u yadeke ombapila ei. Omanyamukulo oye okwa amenwa noino pumbwa nan- de okushanga edina loye.
Dearest teachers. The purpose of this questionnaire is to gain infor- mation in order to understand what reading and writing instruction of Oshikwanyama language at Junior Primary entails. We also want to determine if teachers have been provided with enough knowledge and skills during their teacher training on how to best teach reading and writing at Junior Primary level in Oshikwanyama. This will inform our teacher education at the University of Namibia how best to teach Oshikwanyama language and how we can improve our teacher training in the Faculty of Education. You are humbly requested to take a few minutes to complete this questionnaire. Your answers will be treated with strict confidentiality and you will remain anonymous.

PART 1: BIOGRAPHICAL INFORMATION:

1. Education region…… 2. Name of Circuit:……

3. Name of school:…….

4. Grade taught: (Please tick) 5. Gender: (Please tick)

	Pre-Pri mary	
	Gr. 1	
	Gr. 2	
	Gr. 3	

	Female	
	Male	

6. Age: ……. 7. Mother Tongue: ……

8. Student teacher: ☐ 9. Teacher: ☐ (Tick the appropriate box)

10. Please rate how well you **speak**, **understand**, **read** and **write** Oshikwanyama. Please tick in the appropriate box.

Speak	Excellent	Good	Average	Weak
Understand	Excellent	Good	Average	Weak
Read	Excellent	Good	Average	Weak
Write	Excellent	Good	Average	Weak

11. Highest Qualification: (Please tick)

Masters' Degree	Honours' Degree	Bachelor's Degree	Advanced Diploma	Diploma	Certi-ficate	Currently studying (Please specify) …… …… ……	None

Name/Title of qualification or degree: (Please tick)

M. Ed	B.Ed Full-time Dis-tance	BETD	DJPE Pre-ser-vice UNAM	DJPE IN- SET UNAM	Diploma In Pre-Primary NAMCOL	Diploma in Pre-Primary or Junior Primary IOL	Adva-nced Diploma in Edu-cation	Certifi-cate in Educa-tion	Other (Pleas e speci-fy) ……... .....……

13. Number of years of training (for the qualification): ……...

14. Were (Are) you trained to teach at Lower Primary phase/JP? : Yes / No

15. Years of experience in teaching Lower/Junior Primary: ……...

16. Medium of Instruction used at school (at LP/JP phase): ……...

17. Did you have teacher education/ training of Oshikwanyama language teaching? Yes / No

18. If yes, **what form of education/training and how long was (is) the education/ training?**

as a pre-service student at university	Duration: …….
as a distance student at university	Duration: …….
as an in-service student at university	Duration: …….
in a workshop	Duration: …….
Other (Please specify)	
……	Duration: …….

19. Did the training include reading instruction of Oshikwanyama language?

Yes	No

20. Did the training include writing instruction of Oshikwanyama language?

Yes	No

21. Did you receive education/training in Oshikwanyama phonics instruction?

Yes	No

22. If yes, what form of education/training and how long was (is) the education/training?

as a pre-service student at university	Duration: …….
as a distance student at university	Duration: …….
as an in-service student at university	Duration: …….
in a workshop	Duration: …….
Other (Please specify)	
……	Duration: …….

23. Did you receive education/training in **phonological awareness** instruction of Oshikwanyama language?

Yes	No

24. If yes, **what form of education/training** and **how long was (is) the education/ training?**

as a pre-service student at university	Duration: …….
as a distance student at university	Duration: …….
as an in-service student at university	Duration: …….
in a workshop	Duration: …….
Other (Please specify)	
……	Duration: …….

25. Your current position at school: (Please tick)

Principal		Teacher	
Head of Department		Temporary teacher	
Subject Head		Other (specify):	

PART 2: Omapulo taa shikula oku na sha nomutungilo womawi nomutungilo woitya melaka lOshikwanyama. Kendabala u a nyamukule aeshe ngaashi to dulu.
The following questions are on the phonology and morphology of Oshikwanyama language. Please try to answer them all to the best of your ability.

1. Ulika eendada odo **dihe li** moalfabeta yOshikwanyama. Di ningila ashike okaluumbo.
*(Indicate letters that are **not** in the Oshikwanyama language alphabet. Circle the letters.)*
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

2. Moshitya '*kala'* omu na omawi angapi?
(How many sounds are in the word 'kala')?

3. Moshitya '*eumbo'* omu na omawi angapi?
(How many sounds are in the word 'eum- bo''?

4. Moshitya *'oshimhangwa'* omu na omawi angapi?
(How many sounds are in the word 'oshimhangwa'?

5. Eshi oshihopaenenwa sheenghwambali mOshikwanyama. Ningila okaluumbo ehoololo lomondjila. *(This is an example of a digraph in Oshikwanyama. Circle the correct answer.) :*
(a) lp (b) th (c) nk (d) mh

6. Eshi oshihopaenenwa sheenghwambali mOshikwanyama. Ningila okaluumbo ehoololo lomondjila. *(This is an example of a digraph in Oshikwanyama. Circle the correct answer.) :*

wh (b) nt (c) sh (d) st

7. Oshitya '*meme*' oshi na ounhokotya vangapi?
(*How many syllables are in the word 'meme'?)*

8. Oshitya '*lya*' oshi na ounhokotya vangapi?
How many syllables are in the word 'lya'?

9. Oshitya '*pyakudukwa*' oshi na ounhokotya vangapi?
(*How many syllables are in the word 'pyakudukwa*'?)

10. Oshitya ' *okanghwenyenye*' oshi na ounhokotya vangapi?
(*How many syllables are in the word ' okanghwenyenye'?)*

11. Ulika oshitetekeli, efina, noshixuunini moshitya ' *omumatilela'*. Shanga poumhungu opo ya wapalela. (*Show the prefix, stem and suffix in the word 'omumatilela'. Write in the appropriate space in the boxes.*)

Oshitetekeli	Efina	Oshixuunini

12. Ulika oshitetekeli, efina, noshixuunini moshitya 'edilopya'. Shanga poumhungu opo ya wapalela. *(Show the prefix, stem and suffix in the word 'edilopya'. Write in the appro- priate space in the boxes.)*

Oshitetekeli	Efina	Oshixuunini

13. Ulika oshitetekeli, efina, noshixuunini moshitya 'mememweno'. Shanga poumhungu opo ya wapalela. *(Show the prefix, stem and suffix in the word 'mememweno'. Write in the appropriate space in the boxes.)*

Oshitetekeli	Efina	Oshixuunini

Omapulo 14-17 ookuhoolola. Hoolola enyamukulo lomondjila pakuningila ondada okaluumbo. (Questions 13-16 are multiple choice. For each number, please choose your answer by circling the letter that you think is most suitable.)

14. Omawindada okwa kwatela mo oukwatya ou wondada: *Phonics include the following characteristics of a letter.*

A	B	C	D	E
Ewi alike *(Sound only)*	Ondada aike *(Letter only)*	Ekwatafano pokati kewi nondada pamushange- lo *(The relation-ship between the sound and how the letter looks like in writing)*	Omu- tungilo auke *(Shape only)*	Kandi shi shii *(Don't know)*

15. Eudekokwandjangelo lomawi oshike? (*What is phonological awareness?)*

A	B	C	D	E
Okudula okutofa mo omawi a shangwa	Okudula okundjadjukununa nokukwandjangela nomawi a udika/ a popiwa	Omukalolongo wokulesha oitya	Osha faafana nomawindada	Kandi shi shii
(The ability to identify sounds writ- ten)	*(the ability to break down and manipulate individual sounds in spoken language)*	*(a teaching method for de- coding skill)*	*(The same as phonics)*	*Don't know*

16. Outatalitumbuli ovo: *semi-vowels are*

A	B	C	D	E
Oulitumbuli vaxupi	Oulitumbuli vale	Eendada odo di na oukwa- tya wouli- tumbuli osho yo wouwedwa	Ounhokotya voipolopolo	Kandi shi shii
(Short vowels)	*(Long vowels)*	*(Letters that have characteris- tics of both vow- els and conso- nants.)*	*(Nonsense syl- lables)*	*(Don't know)*

17. Tofa mo oinyangadalwa **<u>ivali</u>** yeudekokwandjangelo lomawi. (*Identify **<u>two</u>** activities for phonological awareness.)*

A	B	C	D	E
Ondada '**o'** tai ulikwa nghee i li ko- shipelende.	Oshitya ***ongobe*** tashi tumbulwa, vo ovahongwa tava pulwa va tofe mo ewi lopetameko ve udite moshitya.	Ondada '**o'** tai kongwa membo	Oshitya ***ongo- be*** tashi tum- bulwa, vo ovahongwa tave shi tuku- la mounhoko- tya	Kandi shi shii
*(The letter '**o'** is shown how it looks like on the chalk- board.)*	*(Saying the word **ongobe** and ask- ing learners to identify the be- ginning sound in the word)*	*(finding the letter **o** from a book)*	*(Saying the word ongobe and the learners divide it into syllables)*	*(Don't know)*

PART 3:
Omapulo 18-20, hoolola omukalolongo ile omukalondunge wokulonga nokulihonga okulesha ou tau tongomonwa momatumbulo taa shikula. Ningila ondada yenyamukulo lomondjila okaluumbo. *(In questions 18-20, choose the teaching method or strategy that is being described in the following sentences. Circle the correct answer.)*

18. Omuhongi okwa tameka nokulonga omawindada → ta i kounhokotya → ta i koshitya shi yadi → ta i ketumbulo → ta i kokaleshwa.
(The teacher started teaching individual phonemes → then she continued to syllables → then to full words → then to sentences → then texts

(a) Omukalo wokulonga elaka pauyadi *(the global method)*
(b) Omukalo welongifo leshiivo lelaka *(the language experience method)*
(c) Omukalo womawindada *(the phonic method)*
(d) Omukalo womahokololo *(the story method)*
(e) Kandi shi shii *(Don't know)*

19. Omuhongi okwa tameka eenghundafana nokaana te ka pula ke mu hokololele osho ka ninga mexuliloshivike, omuhongi okwa shanga osho okaana taka popi, nokaana oka pulwa ke shi leshe. *(The teacher started a conversation with the child asking him/her to tell what he/she did during the weekend. The teacher wrote down what the child told and the child was asked to read what the teacher wrote (child's story).*

(a) Omukalo wokulonga elaka pauyadi *(the global method)*
(b) Omukalo welongifo leshiivo lelaka *(the language experience method)*
(c) Omukalo womawindada *(the phonic method)*
(d) Omukalo womahokololo *(the story method)*
(e) Kandi shi shii *(Don't know)*

20. Omuhongi novahongwa otava lesha aveshe oshita membo lakula. Embo oli kwetiwe komuhongi e li komesho. *(The teacher is holding the big book in front of the class. The teacher and the learners are reading together from the big book.)*

(a) Okulesha taku ulikilwa *(Modelled reading)*
(b) Okulesha taku tukulilafanwa *(Shared reading)*
(c) Okulesha taku yambididwa *(Guided reading*
(d) Okulesha taku hepaununa *(Echo reading)*
(e) Kandi shi shii *(Don't know)*

21. Yeleka omikalolongo tadi shikula okudja kwaau u na oshilonga unene/hau yandje oiimati iwa unene melongo lokulesha kwopetameko kwOshikwanyama. Likwatelela kwaasho wa mona/koneka momukokomoko wokulonga kwoye. Longifa oshiyelekifo shonomola 1-5 kokutya,
1 = omukalo oo hau longo nawa u dule dikwao na
5 = omukalo oo waxuuninwa kudikwao (hau longo ashike kanini ile ihau longo nandenande). Shanga onomola mokamhungu ka shaama nomukalo.
(Rate the following teaching methods from the most effective in teaching learners to read Oshikwanyama to the least effective. Base your rating on your experience throughout the years of teaching early reading. Use the scale 1-5,
1 = the most effective and
5 = the least effective. Indicate the number in the block next to the method.)

(a) Omukalolongo welongo lelaka pauyadi ☐
(the whole language approach)

(b) Omukalolongo welongifo leshiivo lelaka ☐
(*the language experience method)*

(c) Omukalolongo womahokololo ☐
(*the story method)*

(d) Omukalolongo womawindada ☐
(*the phonic method*)

(e) Omukalolongo wokutala nokutumbula ☐
(*the look and say method*)

22. Pauxupi, yandja eenghatu odo ho longifa, ho shikula/ wa itavela da wapala okushikulwa mokulonga ounona okulesha elaka lOshikwanyama. *(Briefly, give the procedure that you follow/ believe in, when you teach children to read Oshikwanyama language.)*

Tetetete ohandi… *(Firstly, I …)*

……
……
……
……

Ndele handi… (*Then I…)*

……
……
……
……

Ohandi twikile noku… (*After that…)*

……

……

……

……

Nokudja opo … *(And then…)*

……

……

……

……

Ndele handi… (Then I…)

……

……

……

……

23. Omaupyakadi ashike (kondadalunde) OKULESHA wa koneka movahongwa? Ningila ehoololo loye okaluumbo. Oto dulu okuhoolola shi dulife pushimwe, she likolelela kouhapu womaupyakadi aa wa koneka mounona (ngaashi tashi pumbiwa). (*What specific READING DIFFICULTIES have you noticed in learners when they learn to read Oshikwanyama? Circle your choice (s). You can circle as many choices as applicable.)*

(a) Ita dimbuluka eendada/ ke shii eendada *(cannot recognize letters/ does not know letters)*
(b) Ita tumbula omawi eendada mondjila *(not sounding the letters correctly)*
(c) Ita dulu okutukula oitya mounhokotya *(cannot divide words into syllables)*
(d) Ita kwatakanifa eendada kumwe a leshe oshitya/Mokulesha oshitya ota lesha ondada nondada *(unable to connect letters to read a word/ when reading a word, s/he reads letter by letter)*
(e) Oku na oudjuu okulesha oitya yeenghwambali neenghwanhatu *(Has difficulty reading words with digraphs and trigraphs)*
(f) Eendada oku di shii, ndele ota kakadala *(knows letters, but s/he reads very slow- ly, repeating letters and words)*
(g) Ita ngudupike oitya ei i na okuleshelwa pamwe mondjila *(inappropriate phras- ing /choppy reading)*
(h) Ita dimbulukwa osho a lesha/ ita dulu oku ku lombwela kutya okwa lesha shike *(does not remember what s/he has read/ cannot tell you what s/he read about)*
(i) Nge owe mu pula omapulo ita nyamukula mondjila *(when you ask her/him a question, s/he will not give a correct answer.*
(j) Imwe po ya wedwa po (*Other)* ……
……
……

24. Oho yambidida ngahelipi ovahongwa ava? *(How do you support these learners?)*

(a) Ohandi va ningifa oinyangadalwa yokudimbuluka eendada. *(I let them do letter recognition activities.)*
(b) Ohandi va ningifa oinyangadalwa yeudeko nekwandjangelo lomawi. *(I let them do phonemic awareness activities.)*
(c) Ohandi va ningifa oinyangadalwa yomawindada. *(I let them do phonics acti- vities.)*
(d) Ohandi va ulikile nghene omawindada haa tumbulwa mondjila. *(I model to them how phonics are sounded correctly.)*
(e) Ohandi va ulikile omukalo muwa wokulesha nomufenu. *(I model to them how to read fluently.)*
(f) Ohandi va longo omikalondunge dokulesha neudeko. *(I teach them reading comprehension strategies.)*
(g) Ohandi konakona oupyakadi wokaana kondadalunde ndele handi u yukilile. *(I diagnose the child's problem and focus on it.)*
(h) Ohandi kwafele ounona koohandimwe. *(I help the children individually.)*
(i) Ohandi va pe omhito va kwafafane. *(I give them an opportunity to help one anoth- er /Peer-support)*
(j) Imwe po *(Other)* …….
……
……

25. Omaupyakadi ashike (kondadalunde) OKUSHANGA wa koneka movahongwa? *(What specific WRITING DIFFICULTIES have you noticed in the learners when they learn to WRITE Oshikwanyama?)*
(a) Omuhongwa oku na oupyakadi okufoloma eendada *(Learner has difficulty with letter formation)*
(b) Ota shange eendada da pilama *(writes letters facing the wrong direction)*
(c) Oitya yaye oya kalelwa po ashike keendada, hop. Oshitya 'kala' ota shange ashike 'kl' *(words are represented only by letters, e.g. when writing the word 'kala', the learner only writes 'kl'.)*
(d) Ita shange momifinda *(Not writing in the lines)*
(e) Ota shange ashike oinima yaye, ndele haitya ei ya popiwa *(Just writes own things, not the words dictated)*
(f) Oha nyengwa okushanga oitya yeenghwambali neenghwanhatu. *(Has difficulty writing words with digraphs and trigraphs)*
(g) Iha dulu okweeta po oitya ile etumbulo laye mwene kombinga yefano ile oshipalanyole. *(Cannot come up with own words or sentence, about a picture or topic.)*
(h) Ita longifa oileshifo mondjila ngee ta shange. *(Does not use punctuation correctly when writing.)*
(i) Ngee a shange, oinima ei a shanga kai uditike. *(When s/he writes, things are not understandable.)*
(j) Imwe po *(Other)* …….
……
……

26. Oho yambidida ngahelipi ovahongwa ava? *(How do you support these learners?)*
(a) Ohandi va ningifa oinyangadalwa yokudimbuluka eendada. *(I let them do letter recognition activities.)*
(b) Ohandi va ningifa oinyangadalwa yeudeko nekwandjangelo lomawi. *(I let them do phonological awareness activities.)*
(c) Ohandi va ningifa oinyangadalwa yomawindada. *(I let them do phonics activities.)*
(d) Ohandi va udifa ko eemhango dokushipela. *(I make them understand spelling rules.)*
(e) Ohandi va pe omusholondodo woitya ve i lihonge momutwe. *(I give them a list of words to memorise.)*
(f) Ohatu yukilile oitya oyo i na omutungilo wa faafana ndele hatu lihongo omhango yoku i shipela. *(We look at words with the same linguistic structure and learn the spelling rule.)*
(g) Ohandi va pula va tumbule omawi omoshitya eshi tava shange oshitya. *(I ask them to sound out sounds in the word as they write the word.)*
(h) Oitya ei ile ohandi va deula va tumbule ounhokotya eshi tava shange. *(I train them to say syllables in the word as they write the word.)*
(i) Ohandi va pe oshitya shonhumba ve shi shange oikando ihapu. *(I give them a spe- cific word to write it many times.)*
(j) Ohandi va pe oinyangadalwa yondeshela. *(I give them dictation exercises.)*
Imwe po *(Other)* …….
……
……

27. Pamadiladilo oye nopashiivo loye lokulonga okulesha Oshikwanyama eedula adishe wa longa, oshike to dulu okutya osho sha fimana noshi li oshipatululo shokushiiva OKULESHA elaka lOshikwanyama? *(According to your views and ex- perience of teaching reading of Oshikwanyama language all those years, what can you say is the most important and is key to learning to READ Oshikwanyama language?)*

(a) _……

……

……

……

(b) Omolwashike? (*Why ?)*

……

……

……

……

28. Pamadiladilo oye nopashiivo loye lokulonga okushanga Oshikwanyama eedula adishe wa longa, oshike to dulu okutya osho sha fimana noshi li oshipatu- lulo shokushiiva OKUSHANGA elaka lOshikwanyama? *(According to your views and experience of teaching writing of Oshikwanyama language all those years, what can you say is the most important and is key to learning to WRITE Oshikwanyama lan- guage?)*

(a) _……

……

……

……

(b) Omolwashike? (*Why ?)*

……

……

……

……

TANGI UNENE ESHI WA KUFA OMBINGA!
(THANK YOU VERY MUCH FOR PARTICIPATING!)

APPENDIX 5. CRONBACH'S ALPHA FOR MEASURES IN PART I

Table 14. Cronbach's alpha for measures in Part I

Measure	Cronbach's alpha
Grade 1:	
Phonemic awareness pre-measure	.67
Letter knowledge pre-measure	.67
Rapid Automatised Naming pre-measure	
Phonemic awareness post-measure	.82
Letter knowledge post-measure	.82
RAN post-measure	
Decoding	.89
Spelling	.89
Grade 2:	
Phonemic awareness	.70
Letter knowledge	.90
Rapid Automatised Naming	
Working Memory Forwards	
Working Memory Backwards	
Decoding	.95
Spelling	.73
Fluency	
Comprehension	.37

APPENDIX 6. PERMISSION LETTER TO CONDUCT RESEARCH

REPUBLIC OF NAMIBIA
OHANGWENA REGIONAL COUNCIL

DIRECTORATE OF EDUCATION, ARTS AND CULTURE
Professional Development: Advisory Services
Private Bag 88005, Eenhana| Telephone +264 (65) 290312| Fax: +264 (065) 290224

3 July 2017

Enquiry: Miriam K Amoomo

Ms Taimi Nghikembua
P.O Box 4341
Windhoek

RE: PERMISSION TO CONDUCT A RESEARCH

I am delighted to inform you that permission is hereby granted to you to do your research for your study at schools in Ohangwena Directorate of Education Arts and Culture as a requirement for the completion of your PhD Studies at the University of Jyvaskyla in Finland This is part of her PhD Studies at the University of Jyvaskyla in Finland.

As per your request, your Study should be undertaken at the following schools, Ofiffya PS, Eenhana PS, Weyulu PS, Ohalushu PS and Josef Shifeta PS

By presenting this letter, Schools concerned are made aware of the granting of permission to you to do your research study there.

It is hoped you will find the above in order

Yours Sincerely

.....23/07/2017

Isak Hamatwi
Director

APPENDIX 7. CONSENT LETTER FOR PARENTS

A.

29 January 2015

The Parent/Guradian of:……

Contact number:……..…….

School: ……..

Dear Parent/Guardian

REQUEST FOR CONSENT FOR YOUR CHILD TO PARTICIPATE IN A READING AND SPELLING STUDY

I am a researcher from the University of Namibia who would like to study your child's development as s/he learns to read and spell in Oshikwanyama language. I am doing this research as part of my studies with the University of Jyvaskyla in Finland.

The main reason for conducting this research is that, not much is known about how our local languages develop in children and how children learn to read and write. Therefore, this research is an attempt to find out how children learn to read and write in our mother tongue. There are a lot of reading difficulties among our children in schools nowadays and it is my hope that the results of this study could help teachers to find solutions how to help children.

I plan to start with the research from 19 January, in the first few weeks, to test the children's skills before they are taught. Tests with the children include their knowledge of letters, reading and spelling words, among others. I will come back in the third trimester to check what skills they have developed by that time. I will still follow the children in Grade 2 to do the same tests with them. The research will not prevent your child from normal teaching and learning as it will take only 25-30 minutes per child. After that, the child will go back class.

The participation of your child in the study will be anonymous and confidential. Their identity will not be revealed in any way.

I kindly ask you to complete the part below, if you accept your child's participation in this study. Please note that you have the right to reject your child's participation.

I, ……, hereby

ACCEPT	REJECT

(Please tick the appropriate box.)

my child's participation in the study.

…… ……

(Signature) (Date)

Thanking you in advance,

……..

Taimi Nghikembua (Researcher) Contact number: 0812297022

B.

29 Januali 2015

Omukulunhu/Omutonateli wa ……. Ongodi:…….

Ofikola: …….

Omukulunhu/Omutonateli omufimanekwa

EEHELO-PITIKILO LEKUFOMBINGA LOKAANA KOYE MOMAPEKAPEKO OKU- LESHA NOKUSHANGA

Ame omupekapeki nda dja koUnivesiti yaNamibia nonda hala okulihonga exumoko-mesho lokaana koye mokulihonga okulesha nokushanga melaka lOshikwanyama. Omape- kapeko aa oku li oshitukulwa shelihongo lange koUnivesiti yaJyvaskyla koSuomi.

Elalakano lomapekapeko aa oleli kutya, inaku shiivika shihapu kombinga yanghene omalaka etu omadalelwamo hae lihongwa nohaa xumu komesho mounona, sha kwatela mo nghene ounona have lihongo okulesha nokushanga. Onghene, omapekapeko aa oo onghen- dabala yokukonakona nghee ounona have lihongo okulesha nokushanga elaka lOshikwanyama. Monena ounona vetu ove na oupyakadi wokulesha nokushanga meefikola. Elinekelo lange oleli kutya omapekapeko aa otashi dulika a ka kwafele ovahongi mokukan- dula po omukundu ou momukalo wonhumba nowongadi, mokukwafela ounona okulihon- ga okulesha nokushanga.

Onda longekida okutameka omapekapeko aa momafiku 19 Januali, oku va konakona moivike yotete manga inava tameka okulongwa. Oinyangadalwa oya kwatela mo eshiivo leendada, okulesha nokushanga oitya, naikwao. Ohandi ka aluka moshikako oshititatu oku- tala nghene tava xumu komesho. Ohandi ke va shikula yoo eshi ve li mOndodo Onhivali noku va ningifa oukonakono va faafana. Omapekapeko aa itaa i moshipala okulongwa kwokaana kwefiku keshe shaashi okwa tengenekwa a kufe ashike lwopominute 25-30 lwaa- po mokaana keshe. Konima yominute odo, okaana otaka shuna mongulu yofikola ka twikile elihongo lako navakwao.

Ekufombinga lokaana koye ola amenwa notali kwatwa nawa pamukalo muwa. Edina lokaana koye itali longifwa nandenande.

Ohandi ku indile nelininipiko u yadeke edina loye neshaino loye pedu apa, ngeenge owa pitika okaana koye ka kufe ombinga momapekapeko aa. Ou na oufemba woku ha piti- ka ekufombinga lokaana koye, ngeenge ino hala ka ningwe omapekapeko.

Ame, ……., epitikilo okaana kange ka kufe ombinga. momapeka peko omu	OHANDI YANDJE (Pa okangobe osho wa hoolola.)	ITANDI YANDJE
……	……	
(Eshaino)	(Efiku)	

Nomapandulo manene,

……
Taimi Nghikembua (Omupekapeki) Ongodi: 0812297022