PHONOLOGICAL AWARENESS IN ENGLISH SECOND-LANGUAGE LEARNERS: LANGUAGE-SPECIFIC DIFFERENCES BETWEEN SOUTHERN SOTHO AND ENGLISH AFFECTING THE ACQUISITION OF EARLY READING SKILLS IN ENGLISH

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by

CATHERINE HATTINGH

Thesis (articles) presented in fulfillment
of the conditions for the degree

MAGISTER EDUCATIONIS

in the

SCHOOL OF EDUCATION

of the

FACULTY OF HUMAN SCIENCES

of the

UNIVERSITY OF THE FREE STATE

BLOEMFONTEIN

DECLARATION

I declare that this thesis, consisting of three articles, presented by me in fulfillment of the degree Magister Educationis at the University of the Free State, is my own independent work and has not been presented at other universities/faculties. I also hereby cede ownership of this thesis on behalf of the University of the Free State.

C.M. Hattingh

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2004

THE RABBIT AND THE TORTOISE
MOSHEMANE MMUTLANYANA

Moshemane mmutlanyana, o lebelo haholo
O rata ho hlola kgudu, ho e hlola peisong

Once a rabbit and a tortoise, in a country far away
Ran a race to find the winner, you or I, who shall it be?

Empa kgudu e pheella, e pheella ka mehla
Ha e batle ho phomola, e tla fihla le yona

Quick as lightning is the rabbit while the tortoise plods along
He will never lose a moment, but continues all the day

Mmutlanyana o kgathetse, o robala ka pele
Ha o hlokomele nako, ha o bone kgudu eo

But the rabbit soon gets tired and he stops beneath a tree
Very quickly he gets sleepy and the tortoise passes by

Kgudu yona e a hlola, e tla fihla kajeno
Mmutlanyana o a sala, re a o tsheha, ha! ha! ha!

In the end it was the tortoise that arrived there just in time,
and the rabbit was the loser, all his speed of no avail.

An old folk tale in Southern Sotho and in English

Acknowledgements

A word of gratitude to:

- **The School of Education that granted permission to undertake this study.**
- **Ms Annelie Ferreira for her excellent guidance and support.**
- **Prof. J. G. Gildenhuys for all his hard work, support and interest in the research study.**
- **The Free State Education Department for permission to conduct this research. A special word of thanks to Mrs. Marguerite Wessels for her co-operation and help during the registration of the research project.**
- **My husband Francois for his contribution and support during the research study.**
- **Eben and Marilette for their patience and support.**
- **God who has made it all possible.**

C.M. Hattingh

2004

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GENERAL ORIENTATION

This thesis was completed in accordance with Regulation B 4.2.18 of the Faculty of Human Sciences at the University of the Free State, stipulating that a thesis can alternatively be presented in the form of related articles in a publication format on an approved research topic.

The overarching title of this thesis is:

Phonological awareness skills in English second-language learners: Language-specific differences between Southern Sotho and English affecting the acquisition of early reading skills in English.

The thesis comprises three articles:

Article 1: The development of phonological awareness in a first language and in English as a second language during the early literacy phase – a literature study.

Article 2: Phonological awareness in Southern Sotho learners: Language-specific differences affecting the acquisition of early reading skills in English – a literature study.

Article 3: Language-specific differences affecting the correlation between phonological awareness skills and early reading skills of grade 3 Southern Sotho learners in a first language and in English as a second language - an empirical study.

The summaries at the end of this thesis also form the conclusion as well as recommendations with regards to the results of this study.

PHONOLOGICAL AWARENESS IN ENGLISH SECOND-LANGUAGE LEARNERS: LANGUAGE-SPECIFIC DIFFERENCES BETWEEN SOUTHERN SOTHO AND ENGLISH AFFECTING THE ACQUISITION OF EARLY READING SKILLS IN ENGLISH – AN OVERVIEW

Successful reading acquisition depends on learners' ability to identify words in print. This implies a variety of sub-skills, such as the knowledge that printed words carry messages as well as an awareness of sound units in words that are more or less represented by letters. English second-language learners often experience problems in the acquisition of early reading skills, such as phonological awareness skills, in English as L2. This study investigates the influence of language-specific differences between Southern Sotho and English affecting the acquisition of early literacy skills in English as L2. Article one addresses the development of phonological awareness skills in a first language representing a transparent orthography (Southern Sotho) as well as an opaque orthography (English). The development of phonological awareness skills in English as L2 may be more difficult, in particular if the L1 and English display significant language - specific differences at word level. This may lead to the acquisition of phonological awareness skills at a later age, causing reading problems for ESL learners throughout their school years. Various language-specific differences between Southern Sotho and English affecting the acquisition of early reading skills in English as L2 are examined in the second article. These differences significantly influence the ability to perform phonological awareness tasks in English. Converging international research results indicate that phonological awareness is the most important predictor of reading ability as well as reading disability during the early literacy phase. In article three the study finally examines how language-specific differences affect the correlation between phonological awareness and reading ability (such as sight-word reading), in Southern Sotho and in English. The results indicate that phonological, morphological and orthographic differences between Southern Sotho and English significantly influence the level of phonological awareness in Southern Sotho learners, as well as the correlation between phonological awareness and reading ability in both languages.

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ARTICLE 1

THE DEVELOPMENT OF PHONOLOGICAL AWARENESS IN A FIRST LANGUAGE AND IN ENGLISH AS A SECOND LANGUAGE DURING THE EARLY LITERACY PHASE – A LITERATURE STUDY

LIST OF TABLES

THE DEVELOPMENT OF PHONOLOGICAL AWARENESS IN A FIRST LANGUAGE AND IN ENGLISH AS A SECOND LANGUAGE DURING THE EARLY LITERACY PHASE

1.1 INTRODUCTION

In order to examine the development of phonological awareness skills in a first language (L1) and in a second language (L2), it is important first to focus on the significance of early reading skills (such as phonological awareness skills) and how these support beginner reading. Early reading skills in alphabetic languages include the knowledge that printed words carry messages (that a systematic relationship exists between text and spoken messages), that words have an internal sound structure (phonological awareness skills), and that words are composed of letters (Beck & Juel, 1992:3, 4). Explicit instruction in phonological awareness skills and letter-sound correspondences therefore supports the acquisition of early reading skills such as sight-word reading. Rapid and accurate word recognition is necessary for fluent reading; yet this is one of the most difficult skills for beginner readers to develop (Stanovich, 1988). If learners fail to acquire sight-word recognition skills they often remain poor readers throughout their lives (Stanovich, 1986).

Numerous research studies confirm that phonological awareness is the most critical phonological processing skill that predicts reading ability as well as reading disability as early as kindergarten years (Bialystok, 2001:165; Spector, 1995; Yopp, 1992; Adams, 1990; Wagner & Torgesen, 1987). Phonemic awareness also remains one of the most reliable predictors of reading success, and is more powerful than cognitive abilities, vocabulary and listening comprehension (Adams, 1990). Phonological awareness skills refer to the conscious awareness of speech sounds and the ability to manipulate them in words (Brownell & Walther-Thomas, 1999; Spector, 1995; Adams, 1990; Mann & Brady, 1988). Phonological awareness therefore leads to a new classification of words according to their sounds and not according to

their meaning. Learners, who enter their first grade with the ability to identify and manipulate phonemes, quickly gain insight into the alphabetic principle, i.e. that graphemes systematically represent spoken words. Skilled readers need to understand that words comprise individual speech sounds that are more or less represented by letters (Moats, 1995; Adams, 1990).

Research findings by Wagner & Torgesen (1987, cited in Cockroft *et al.*, 2001) indicate that although two languages may differ in depth of orthography (i.e. transparent or opaque), phonological awareness skills promote the development of both a non-lexical, phonological strategy as well as the development of a lexical, visual strategy in word identification. Phonological awareness skills therefore support word identification skills in the following ways:

- It helps learners to become aware of the internal sound structure of words.
- It helps learners to understand how the sounds in words relate to the letters or graphemes that represent them (development of the alphabetic principle).
- It helps learners to develop a reading strategy in which unfamiliar words can be accessed and identified. Learners will subsequently be able to analyse spoken words and word spelling in order to expand their reading vocabularies independently (Gildroy, 1999).

1.2 RESEARCH QUESTIONS

The development of early literacy skills is crucial to the acquisition of reading in the primary language (Adams, 1990:304). The advantages of phonological awareness skills are that the learner becomes aware of the internal sound structure of words, thus leading to better word recognition in spoken and written language (Jannuzi, 1998; Spector, 1995).

In view of the above, the following research questions are formulated:

- How do learners develop phonological awareness in a L1 and in English as a L2 during the early literacy phase?
- What are the contributing factors that will influence the development of phonological awareness skills in English as a second language?
- Will phonological awareness skills of Southern Sotho learners transfer as metalinguistic skills to support the development of phonological awareness skills in English as L2?

1.3 AIM OF THE RESEARCH

The present study examines the development of phonological awareness skills in ESL learners and how language-specific differences affect the acquisition of early reading skills in English.

This article provides a literature review of the development of phonological awareness skills in a first language (representing an opaque and a transparent orthography) and in English as a second language during the early literacy phase.

1.4 VALUE OF THE RESEARCH

This research study makes a contribution in the following areas:

- The literature study provides a review of the development of phonological awareness skills in a first language and in English as a second language. It indicates that well-developed phonological awareness skills in the mother tongue support the acquisition of early reading skills not only in a first language but also in a second one.
- The advantages of phonological awareness skills for learners address ways and methods to restructure literacy and reading acquisition programmes in order to support all South African learners during the early literacy phase.

1.5 CONCEPT CLARIFICATION

Alphabetic principle

This implies that letters represent sounds and that a word has a sound structure consisting of individual sounds. Alphabetic understanding and phonological awareness become the larger construct, the alphabetic principle.

Conjunctive orthographies

This refers to the conjunctive way of writing words in a language; i.e. parts of speech (clauses or words in the same clause) are joined together. For example, the Zulu word 'wayesezofika'. In South Africa words in the Nguni languages (Zulu, Xhosa, Swati and Ndebele) are written conjunctively (Louwrens, 1991).

Consonant clusters

This refers to a group of three successive consonants appearing at the beginning of words. For example, in English, words such as 'string', 'spring' and 'shrewd'.

Consonant blends

This refers to two successive consonants appearing at the beginning or end of words. For example, in English, words such as 'blend', 'spend', and 'splint'.

Decoding

This refers to the translation of individual letters and/or groups of letters into sounds in order to access the pronunciation of a word.

'Deep' orthographies (also referred to as opaque or inconsistent orthographies)

This refers to orthographies of languages in which words have many irregular sound-symbol relationships, e.g. in English words such as 'light' and 'enough' sounds do not correspond directly to the symbols that represent them.

Disjunctive orthographies

This refers to the disjunctive way of writing words in a language. Parts of speech (clauses or words in the same clause) are written separately.

Although parts of speech are written separately in the Southern Sotho word 'ke lapile', it represents one concept and is therefore regarded as one word. In South Africa words in the Sotho languages (Southern Sotho, Northern Sotho and Western Sotho) are written disjunctively (Louwrens, 1991).

ESL:

English as a second language.

Early reading skills

This refers to 'reading readiness' skills such as phonological awareness skills and decoding skills necessary to become a proficient reader in a language.

First language (L1)

This is the language a normal child acquires in the first years of life. Alternatively, it is termed home language or mother tongue.

Language structures

Languages have *universal structures* such as phonological, prosodic, syntactical, morphological and semantic structures that are part of all languages in the world. Languages can also be identified by means of *language-specific structures,* e.g. the phonemic inventory of a language is regarded as language-specific as it contains the phonemes that are uniquely part of a language (Goswami, 2003).

Morpheme

This refers to the smallest meaningful unit in a language. A morpheme may be a single phoneme (such as the word 'a'), a prefix or a suffix (e.g. /ad-/, /-ism/) or a single or several syllables (e.g. 'girl', 'miscellaneous').

Onset-rime

An onset is the initial consonant or consonant cluster and the rime is the vowel sound and subsequent consonants in the syllable. For example, the division of the words 'sip' and 'slip' into onset and rime will be /s/ip, sl/ip/.

Phoneme

This refers to the smallest unit of sound. Individual sounds in languages may be indicated by a number of symbols, e.g. the /th/ sound in English, and the /ts/ and the /tsh/ sounds in Southern Sotho.

Phonics instruction

This refers to instructional practices that emphasise how the spelling of words is systematically related to speech sounds.

Phonological awareness

Phonological awareness refers to the general understanding that words and syllables comprise a sequence of speech sounds.

Phonological awareness skills

This refers to the ability to perform a variety of graded phonological awareness tasks.

Phonological awareness tasks

This refers to tasks such as segmenting sentences into words, segmenting and blending phonemes in words, identifying initial rhyming and rhyming songs, and identifying and manipulating of phonemes in words.

Reading acquisition

This refers to the process whereby a learner acquires early reading skills necessary to read.

Second language (L2)

This refers to a language acquired or learned simultaneously with, or after, an individual's acquisition of a first language.

*'Shallow' orthographies (*also referred to as transparent or consistent orthographies)

This refers to orthographies of languages in which sounds in words directly correspond to the symbols representing them. African languages have 'shallow' or transparent orthographies in which words have a direct sound-symbol relationship, e.g. in Southern Sotho the words 'leleme', 'tsamaya' and 'dilepe'.

Syllable

This refers to the typographical or linguistic division of words into groups of letters or sounds.

Target language

The language that a learner is trying to acquire or learn.

1.6 THE DEVELOPMENT OF PHONOLOGICAL AWARENESS SKILLS IN A FIRST LANGUAGE

1.6.1 Phonological processing in a language

Phonological awareness is part of the larger construct known as phonological processing (Hurford, Darrow, Edwards, Howerton, Mote, Schauf, & Coffey, 1993; Wagner & Torgesen, 1987). Phonological processing in a language implies that a person will be able to use the sounds of that language in order to process verbal information in oral or written form in both short- and long-term memory (Wagner & Torgesen, 1987). Research studies indicate that phonological processing represents two dimensions, i.e. coding and awareness, each with multiple dimensions (Hurford *et al.*,1993; Wagner & Torgesen, 1987). Both dimensions are related to early reading acquisition and include phonological memory, rate of access for phonological information as well as phonological awareness (Torgesen, Wagner & Rashotte, 1994; Wagner, Torgesen, Laughon, Simmons & Rashotte, 1993). The two dimensions will be discussed briefly.

1.6.1.1 Coding

Two coding dimensions are isolated, namely phonetic and phonological coding (Wagner & Torgesen, 1987). The difference between the two coding processes is the type of memory employed during the execution of phonological processing tasks. **Phonetic re-coding** takes place in short-term memory. The beginner reader must be able to decode a series of graphemes and temporarily store them in phonological short-term memory in order to blend phonemes in the correct sequence to form words (e.g. in sounding out unfamiliar words). During the **phonological re-coding** process the lexicon

(internal dictionary) is accessed in long-term memory for known words. The skill is considered relevant to reading because the rate of access to a sound, a sound sequence or a word meaning impact on sight-word reading. Phonological re-coding in long-term memory is therefore regarded as an important predictor of early reading ability (Webster & Plante, 1992).

1.6.1.2 Awareness

Phonological awareness refers to an oral phonological processing ability, also representing multiple dimensions. Phonological awareness includes an awareness of all sizes of sound units, such as words, syllables, onset-rimes and phonemes. As a child grows and develops she/he gradually becomes aware of different sounds that make meaning. This implicit awareness of sounds develops through normal language development (Werker, 1999). As a child acquires more words explicit awareness of sound units develop at the level of the word, syllable and the onset-rime during the pre-literacy phase. Current evidence suggests that this developmental sequence at the pre-literate level is similar across languages (Goswami, 2003).

Phonological awareness skills refer to the ability to perform a variety of graded tasks, such as segmenting, blending, identifying and manipulating sound units in words. Phonological awareness skills are fundamental to reading acquisition. Segmenting and blending activities interacts with letter knowledge and helps learners to understand the relationship between sounds and letters in words (Muter, 2004; Adams, 1990; Wagner & Torgesen 1987). To acquire the alphabetic principle therefore requires segmentation skills, knowledge of the alphabet and the ability to make the connection between sounds and letters in words (Muter, 2004).

The following factors, however, will impact on the development of phonological awareness and result in poor phonological awareness skills:

- **Memory requirements of the phonological awareness task**

Phonological awareness tasks require various steps for completion. For example, when segmenting words into syllables a learner must keep the verbal material in short-term memory, and then complete the task, e.g.

segmenting and blending of phonemes in words (Yopp, 1988). Problems in phonetic re-coding in short-term memory will therefore cause problems in developing phonological awareness skills.

- **Characteristics of the phonological units**

Phonemes are difficult to perceive because they are the smallest phonological unit, are part of the speech stream and do not carry meaning on their own. By knowing the distinctive characteristics of each phoneme in a language, and by paying attention to how the mouth, lips, teeth and tongue work together to say a word will facilitate the correct identification of individual phonemes (Gildroy, 1999). The position of phonemes in words also influence the ability to perform more complex phoneme identification and phoneme manipulation tasks. Phonemes in initial and final positions are easier to identify than phonemes in the middle of words (Mann & Brady, 1988).

1.6.2 The development of phonological awareness in English and in Southern Sotho as first languages

1.6.2.1 Introduction

South Africa has eleven official languages, namely English and Afrikaans (which have European roots), Southern Sotho, Northern Sotho, Western Sotho, Swati, Xhosa, Zulu, Xhosa, Ndebele, Venda and Tsonga representing indigenous African languages. Afrikaans and African languages display a direct phoneme-grapheme relationship and are classified as phonetic languages representing consistent orthographies. English represents a more inconsistent or opaque orthography with approximately 80% predictability in terms of sound-symbol relationships (Mora, 2001). Phonological awareness skills and grapheme-phoneme re-coding develops relatively efficiently in consistent orthographies, but learners may develop phonological awareness skills at a slower rate in inconsistent orthographies (Goswami, 2003). South African studies investigating the developmental sequence of phonological awareness skills of learners in English and Afrikaans support the findings of Goswami (Cockroft, Broom, Greenop & Fridjohn, 2001; Cockroft *et al.*, 1999). The results of these studies indicate that after two years of reading instruction readers of consistent orthographies perform better at phoneme segmentation

and blending tasks than readers reading in a language (such as English) that has many irregular sound-symbol relationships (Cockroft *et al.*, 2001). ESL learners transferring from consistent to inconsistent orthographies (e.g. from Southern Sotho to English) may therefore experience problems in developing 'reading readiness' skills such as phonological awareness skills in order to become independent readers in English during the early school years. The development of phonological awareness skills in English and in Southern Sotho as L1 will be discussed briefly.

1.6.2.2 The development of phonological awareness skills in English as L1

The ability to segment sentences into words and to identify rhyming words in nursery rhymes and rhyming songs are the easiest phonological awareness tasks in English (Adams, 1990). English mother-tongue pre-school children (three to six years old) are generally able to perform not only basic phonological awareness tasks, but also more complex tasks such as segmentation and blending of syllables and onset and rimes in words. Previous research findings regarded pre-school awareness of syllable and rhyme to be a significant predictor of reading development in English (Bradley & Bryant, 1983). Current research, however, indicates that segmentation and rhyming are separate abilities in the phonological awareness domain (Muter, 2004). Segmentation and manipulation skills are thus found to be better predictors of early reading ability in English than rhyme awareness (Muter, 2004). It is suggested that the ability to identify rhyme makes a separate contribution to the reading and writing processes at a later stage (e.g. the use of rhyme analogies will help learners to read and spell English words correctly). For inconsistent languages such as English, phonemic representation is found to be slower and learners will only achieve the highest level of phonemic awareness after approximately three years of reading instruction (Goswami, 2003). Some of the phonemic awareness tasks in English are more difficult to perform. Children experience more difficulty deleting or adding phonemes in complex onsets (containing more than one consonant) than single phoneme onsets (Caravolas & Bruck, 1993).

According to Muter (2004), the developmental sequence of phonological awareness skills in English as L1 can be represented in the following way:

Table 1: The developmental sequence of phonological awareness skills in English

Age	Developmental sequence	Print experience
4 years	Nursery rhymes Rhymes recognition Syllable blending Syllable segmentation	Learning letters
5 years	Alliteration Beginning sound matching Onset-rime segmentation Rhyme production	Learning letters Building sight-word vocabulary
5 years, 6 months	Syllable manipulation Identification of beginning and end phonemes Phoneme blinding Phoneme segmentation	Building sight-word vocabulary Developing decoding skills
6 years	Phoneme addition Phoneme deletion Phoneme substitution	Building sight-word vocabulary Developing decoding skills

The following phonological awareness tasks represent the developmental stages of phonological awareness skills in English. These tasks should be introduced during the early literacy phase in order to help learners to become aware of the sound structure of words, and to prepare them for reading instruction in English.

Table 2: Examples of phonological awareness tasks in English

(Hempenstall, 2001; Stanovich, 1993/1994):

Phonological awareness task	Example
1. Recognition that sentences can be broken down into separate words	How many words are there in: 'Reading is fun'?
2. Recognition that a word can be broken down into syllables.	Tap the number of syllables that you hear in the word 'television'.
5. Recognition that words can rhyme.	What words sound the same 'book', 'cat' or 'look'?
9. Recognition of initial sounds (alliteration).	Do 'pen' and 'pipe' begin with the same sound?
3. Recognition that words can be broken down into onsets and rimes.	/br/ight/
4. Blending syllables and onsets and rimes into words.	What word would we have if we put the following syllables or onsets and rimes together e. g. pa/per and str/aight?
6. Rhyme production	Find words that rhyme with 'cat' and 'sat'.
7. Phoneme identification. The ability to segment words into separate phonemes.	What sounds do you hear in the word 'hot'?
8. Blending phonemes to make words.	What word would we have if we put these sounds together /s/a/t/?
10. Recognition of final sounds.	Which two words end with the same sound, 'tip', 'bluff' 'lip'?
11. Odd word out	What word starts with a different sound? 'bag', 'nine', 'beach' or 'bike'
12. Recognition that words can have the same medial sound(s).	Which word doesn't have the same middle sound? 'burrow' or 'swallow'.

13. Phoneme manipulation: Recognition that sounds can be deleted from words in order to make new words.	What word would be left if the /k/ sound was taken away from the word 'cat'?
14. Sound isolation	What is the first sound in the word 'rose'?
15. Phoneme counting	How many sounds do you hear in the word 'cake'?
16. Delete phoneme	What sound do you hear in 'meet' that is missing in 'eat'?
17. Sound-to word matching	Is there a /k/ in the word 'bike'?
18. Substitution of phonemes (initial, medial and final)	(i) Substitute the initial sound in the word 'house' with the sound /m/. (ii) Substitute the medial sound in the word 'bad' with /e/. (iii) Substitute the final sound in the word 'sip' with /t/.

1.6.2.3 The development of phonological awareness skills in Southern Sotho as L1

Southern Sotho is regarded as a phonetic language representing a transparent orthography. The developmental sequence of phonological awareness skills in Southern Sotho should follow the normal language-universal pattern i.e. development at word, syllable, onset-rime and phoneme levels, but may be easier due to the direct sound-symbol relationship that exists between phonemes and their corresponding symbols. Sound-symbol decoding ability is usually present in languages representing transparent orthographies after one year of reading instruction (Goswami, 2003). Phonemic awareness therefore develop at an earlier stage than in languages representing opaque orthographies, such as English (Cockroft *et al.*, 2001). Southern Sotho, like all other African languages, is distinguished by its prefix

concordial system. Each complete word is made up of several bound morphemes which combine in a definite and orderly sequence (Guma, 1971:2). Structural (morphemic) analysis of words often precedes or accompanies the teaching of sight-word reading.

The awareness of words as units of analysis is the first crucial phonological awareness skill to master before proceeding to awareness of intra-syllabic units of the syllable, onset and rime as well as phonemes (Adams, 1990). The Sotho language group in South Africa identifies and writes words disjunctively at school level. Word identification and identification of word boundaries according to scientific word identification tests is only be introduced at university level for students studying African languages. According to the disjunctive way of word identification, many short syllables are recognised and written as separate words (e.g. a Southern Sotho learner will identify 'ke a mo rata' as four words, but the word group 'ke a mo rata' is regarded as one word by African linguists).

The identification of word boundaries therefore presents a problem area in African languages because of the way words are formed in these languages (Louwrens, 1991: 1-12). The greatest challenge for African learners is subsequently the written representation of words due to the disjunctive or conjunctive way in which words are represented in African languages. Problems to identify word boundaries impact on the development of phonological awareness skills. The segmentation of sentences into words should therefore form the basis for the development of phonological awareness skills in all African home languages.

At present the development of phonological awareness skills forms part of the Revised National Curriculum Statement and is specified as a learning outcome in the language learning area for all home languages in South Africa from grade R to grade 3 (Department of Education, 2002). Phonological awareness skills in English are usually developed by means of a variety of graded tasks such as the identification of rhyme through rhymes, nursery rhymes and rhyming songs, segmentation, blending and phoneme identification tasks. Many of these tasks do not support word identification in

African languages. For example, the following phoneme awareness tasks support word recognition in English, but not in Southern Sotho:

- **Rhyme identification as well as rhyme production.**

There are few rhyming words in Southern Sotho. Rhyme therefore plays no role in word identification in Southern Sotho.

- **The identification and deletion of final phonemes in words.**

Identification or deletion of final phonemes do not make the same contribution to word identification as is the case in English, because all words in Southern Sotho end either with a vowel or with a nasal consonant - the remaining phoneme will therefore always be a vowel or /ng/.

- **Deletion or substitution of phonemes in initial consonant clusters, as well as initial and final consonant blends in words.**

There are no initial consonant clusters, or initial and final consonant blends in Southern Sotho words.

From the above it is clear that meaningful phonological awareness tasks must be developed in order to support word identification in African home languages. The following phonological awareness tasks, for example, help Southern Sotho beginner readers to develop the alphabetic principle and support word identification skills in their L1. These tasks are indicated in Table 3.

Table 3: Examples of phonological awareness tasks in Southern Sotho (Gildenhuys, 2004)[1].

Phonological awareness task	Example
1.Segmentation of sentences into words.	Ha ke batle mosebetsi o thata. (The Southern Sotho learner distinguishes 6 words, but 'ha ke batle' is regarded as one word by African linguists).
2. Segmentation of words into syllables.	'leleme' can be divided into 3 syllables /le/le/me
3. Segmentation into onsets and rimes.	m/aru, m/atlo

4. Segmentation of phonemes in words.	/h/a/u/f/i/ - haufi
5. Blending of syllables in words.	/mo/tho – motho, /tshe/pe - tshepe
6. Blending of phonemes in words.	p/o/t/a (pota), m/o/s/e (mose)
7. Phoneme identification: Identification or deletion of initial phoneme.	/k/atse, /m/otse, /kg/a, /shw/a and /ng/aka, /th/ala
8. Phoneme substitution tasks. Phoneme substitution tasks will lead to better word recognition because medial phonemes in Southern Sotho words can often be substituted or manipulated to form new words.	(i) Substitution of the initial phoneme. (/ny/ala - /b/- bala, /th/ola/ - /b/- bola, /hl/ola - /h/-hola). (ii) Substitution of a medial position vowel in a CVCV word. (pota - /a/ [pata], ruta - /a/- [rata], loka - /e/- [leka], benya - /o/- [bonya]. (iii) Substitute a vowel in any position. (bu - /o/ [bo], tla - /e/ [tle], bola - /e/ [bela], tla - /e/ [tle, tloo], ntlo - /e/ [ntle]. (iv) Substitute the final vowel of a word. (tla – e/oo- [tle/tloo], kobo – a -[koba], seboko - /a/- [seboka], mokubetsi - /o/- [mokubetso].

1. Phonological awareness tasks supplied by Prof J. G. Gildenhuys, 2004.

1.7. The relationship between phonological awareness skills and reading in English and Southern Sotho

Some phonological awareness skills are linked more directly to word recognition during the reading process. The relationship between the various phonological awareness skills and reading in English and in Southern Sotho will be discussed briefly.

1.7.1 Segmentation into words

In order to start the reading process, learners must have:

- An awareness of a process that isolates words as meaningful units.
- An awareness of how words function in order to carry their meaning (Bialystok, 2001).

The development of more complex phonological awareness skills such as phoneme identification and manipulation of phonemes in words depend on achieving this initial phonological awareness skill. It will not be possible to identify phonemes in words without first identifying words and word boundaries (Bilaystok, 2001). Failure to identify words as basic units in sentences will be a barrier to the further development of other phonological awareness skills and may lead to problems in performing other segmentation tasks. African L1 learners need direct instruction how to identify words and word boundaries in their home languages but also when starting to read in English as L2.

1.7.2 Segmentation into syllables

The ability to segment and blend syllables in words improves not only phonemic awareness, but also word recognition in reading, spelling and writing skills in the primary language. According to Muter (2004) segmentation and manipulation skills are highly related to reading ability during the early literacy phase. In both European and African languages, the syllable is regarded as the primary linguistic processing unit and can be distinguished by auditory cues such as rhythm and stress (Goswami, 2003). In European languages a syllable refers to a set of sounds that form a part of a word, each part containing a vowel. Words in Southern Sotho, however, can be divided into syllables that contain only a single phoneme (for example the word 'mme' can be divided into two syllables /m/ and /me/). Southern Sotho learners who transfer linguistic knowledge from their mother tongue may experience problems during segmentation tasks in English (e.g. in words containing double medial consonants - 'summer', 'swallow' and 'butter').

1.7.3 Segmentation into onsets and rimes

An onset is the initial consonant or consonant cluster in a word and the rime is the vowel sound, as well as the rest of the phonemes in the word. Words ending in the same rime are said to rhyme (e.g. in English - /-ight/ in 'bright' and 'light'). English has many irregular sound-symbol correspondences and in many cases groups of letters do not map onto the same sound. Due to this dilemma, Goswami (1992) recommends the division of words into onset and rime, because the rimes in rhyming words tend to be more regular and share

spelling patterns. Being aware of rhyme is therefore helpful in learning to read, spell and write in English. The division of words into onsets and rimes also help to identify complex consonant clusters that occur at the beginning of many English words e.g. /str/ in the words 'straight' and 'string' and /shr/ in the words 'shrewd' and 'shrivel'. English readers will often use analogies between the onset and rime of known words in order to guess the reading of unknown words (Goswami & Bryant, 1990). Rhyming and alliteration activities are often used as the basis for a more systematic instruction in the letter-sound system during the word recognition process in English. By contrast, segmentation of words into onsets and rimes will support word recognition to some extent in Southern Sotho, but will not make the same contribution to word recognition and spelling abilities as is the case in English, because rhyme is seldom used in Southern Sotho.

1.7.4 Phoneme awareness

Phonemic awareness and manipulation of phonemes (deleting, substituting, adding letter sounds) are highly related to word identification skills (Muter, 2004; Wagner & Torgesen, 1987; Stanovich, 1986). Phoneme identification develops the alphabetic principle and has a stronger link to reading acquisition than the segmentation of words into syllables (Byrne & Fielding-Barnsley, 1995, 1993). Phonological awareness skills taught during the pre-literacy phase support the development of phonemic awareness in English and in Southern Sotho. There is also increasing evidence that early writing activities such as spelling words as they sound (invented or phonemic spelling) also promote a more refined phonemic awareness (Ehri, 1998). The development of early writing activities (such as the spelling of words) will benefit Southern Sotho L1 learners in particular due to the morphemic structure of words in Southern Sotho.

1.8 THE DEVELOPMENT OF PHONOLOGICAL AWARENESS SKILLS IN ENGLISH AS A SECOND LANGUAGE

The development of phonological awareness skills in a L2 displays similarities as well as significant differences with regard to the development of phonological awareness skills in a L1. According to Cockroft *et al.* (2001:3), the developmental sequence of phonological awareness skills in a L2 should simulate the developmental process of L1 speakers, but may develop at a different rate and in a different order depending on the orthography of the language. Jannuzi (1998:2) also reports that:

'ESL learners do not have the native speaker competence with English phonology and their development must take a different path. ESL language and literacy development may resemble the linguistic development of learning disabled learners. Their development will not follow the fairly smooth path of the majority of native speakers and may require highly individualised and a linguistic enlightened approach to reading instruction and remediation'.

African learners usually enter the school system with a well-developed home language and have phonemic abilities in their mother tongue. However, because these learners come from different socio-linguistic backgrounds, they may be unfamiliar with the sounds and syllabic patterns in English and at first may not be attuned to them. Vowel sounds will in most instances be easy to identify because they last long enough in spoken words for a child to hear. For example the [ɔ] sound in 'cot' can be clearly heard and isolated (Perfetti, 1985:209). This will not be the case with consonants. The perception and production of stop consonants (plosives) is dependent on vowels that precede and follow them (Perfetti, 1985:209). This means that identifying or 'discovering' final phonemes such as /t/, /d/, /p/, /b/ in English words such as 'pot', 'plod', 'blood', 'dead' and 'peep' may be especially difficult for ESL African learners. Final consonants often found in words in English do not exist in words in African languages. This may cause problems for Southern Sotho learners in identifying final consonants in English words and may result in poor phonemic awareness in English. Poor phonemic awareness skills lead to poor word recognition skills and influence spelling and writing skills in English.

1.9 THE TRANSFER OF METALINGUISTIC SKILLS FROM L1 TO ENGLISH AS A L2

Once children have achieved insight into the sound system of their mother tongue, this can be used as metalinguistic knowledge in order to support the development of similar linguistic skills in a second language. Transfer of phonological knowledge is regarded as a high level of linguistic transfer in which 'an abstract understanding of the sound structure is used to uncover the sound structure of a new language' (Bialystok 2001:169). Phonological awareness skills of Southern Sotho learners will therefore be the foundation on which linguistic skills, such as phonological awareness skills can be developed in English as L2.

1.10. FACTORS THAT INFLUENCE THE DEVELOPMENT OF PHONOLOGICAL AWARENESS SKILLS IN ENGLISH AS A SECOND LANGUAGE

The development of phonological awareness skills in English as a second language is influenced by the same factors affecting the development of phonological awareness skills in a L1, such as the memory requirements of the task and the characteristics of the phonological unit. Additional factors may, however, cause a delay in the development of phonological awareness skills in English as a L2. The most significant of these factors will be examined briefly.

1.10.1 Oral language proficiency

Oral language proficiency is regarded as a pre-requisite when developing phonological awareness skills in a L2. A 'threshold level' of oral language proficiency is regarded as the deciding factor of success or failure in second language reading (Gibbons, 1991). The early stage of oral language proficiency in second-language acquisition usually involves a silent period in which the child is "tuning his/her ear" to the new sounds of the language (Krashen, 1983). This period is regarded as crucial in the development of phonological awareness skills because learners first have to identify the sounds in a language before they are able to distinguish between individual

sounds in words. During this period oral language activities such as listening to stories, retelling of stories and opportunities for verbal communication should be introduced in order to help learners to become familiar with the sounds of the new language and prepare them for the development of phonological awareness skills in a L2.

ESL learners also experience a transitional period called interlanguage (Selinker 1972). During this period the ESL learner continues to construct and internalise the distinct sound features of the second language. The sounds of the target language are perceived, patterned and categorised in order to process the new sounds in long-and short-term memory. Interlanguage is most evident when the phonology of the learner's L1 is markedly different from English (Jannuzi, 1998). African learners need exposure to many oral language activities in order to become familiar with the sound features of the English language. Many black South African learners do not have the opportunity to develop crucial early literacy skills due to political, language and ideological policies of the past. They lack oral proficiency and the extensive vocabulary necessary to start reading instruction in English. In order to address this inequality, Engelbrecht, Kriegler & Booysen (1996:347) recommend that children in rural schools should have 'better-than-average literacy instruction; they need an introduction to literacy which is so rich in story, language, print and books that their early disadvantage can be erased. They need to be immersed in print and engaged with books in the class-room'.

Once African L1 learners achieve oral proficiency in English they will be able to construct and internalise the speech sounds that are unique to the English language. They will be able to identify spelling patterns, learn to apply the appropriate phonics system for each language, and start to construct two sets of rules for the two different languages. They will eventually become aware of the fact that there are certain sounds in their mother tongue that are not represented in the second language (Jannuzi, 1998).

1.10.2 Vocabulary

One of the most important aspects of oral language proficiency is the development of an extensive vocabulary. A limited vocabulary may delay the development of phonemic awareness skills necessary for fluent decoding of written words. A poor vocabulary also prevent learners from producing examples required for the development of specific phonological awareness tasks in English such as production of rhyming words. Snow, Burns & Griffin (1998:47) also note that 'there is a well-documented link between vocabulary size and early reading ability'. A pre-requisite to reading instruction therefore is exposure to language learning experiences that effectively build the English vocabularies of ESL learners in order to become independent readers in English (Constantino, 1999).

1.10.3 Background knowledge

According to Singhal (1998), a second language usually contains a linguistic base that is phonetically, syntactically and semantically different from a L2. ESL learners may experience problems in acquiring linguistic skills such as phonological awareness in a L2, especially if the L1 and the L2 display no similarities (Singhal, 1998). Language-specific differences between the L1 and English as L2, such as unfamiliar phonemes in English, result in difficulties for ESL learners acquiring phoneme awareness skills, and lead to poor word recognition skills in English. ESL learners also bring different cultures to the classroom. For example, children from African cultures may lack specific knowledge of nursery rhymes commonly found in English. Consequently, ESL African learners find tasks such as identification and production of alliteration and rhyming words extremely difficult.

1.11 SUMMARY AND RECOMMENDATIONS

Every language has a unique linguistic structure that has to be taken into account when developing reading skills during the early literacy phase. Phonological awareness is found to be one of the most important early reading skills that predicts the acquisition of successful reading in both transparent and opaque orthographies. Phonological awareness skills, however, need to be developed within the appropriate phonological context of each language (Mora, 2001). For example, phonological awareness plays a crucial role in the acquisition of early reading skills in English as a first language as well as in English as a second language. Phonological awareness in English is also a reliable predictor of reading success in English. However, it seems that phonological awareness does not play the same crucial role in predicting reading ability in languages representing transparent orthographies. Phonological awareness often needs to be complemented by structural (morphological) awareness to support word identification in African languages.

In South Africa, most African learners transfer to English as language of learning and teaching at the beginning of grade four. The development of phonological awareness skills in African home languages will be the foundation on which similar linguistic skills can be developed in English as L2. Strong L1 language skills transfer as metalinguistic skills and support the acquisition of literacy skills in a second language. African ESL learners, however, need direct and specific instruction to develop phonological awareness skills in English as L2, due to the many language-specific differences between African languages and English. In order to support African ESL learners to develop phonological awareness skills in English as a L2, it is recommended that:

- Literacy instruction should initially focus on L1 language reading skills because of its positive impact on the development of second language reading skills (Carlo & Skilton-Sylvester 1994).
- Educators should explain the significance and the advantage of phonological awareness and its relationship to word recognition in order to

motivate and encourage learners to develop phonological awareness skills in English.

- Oral language activities such as listening to stories should be included in all curricula to introduce new language sounds to the ESL learner and to develop important listening skills. Language games such as action rhyming, songs and chants will enrich and prepare ESL learners for the development of phonemic awareness skills in English.
- Phonological awareness activities should always be done in context and not isolated from 'meaning-making' language activities, to support vocabulary acquisition in English.
- Learners should develop a wide range of phonological awareness skills to prepare them to reach the crucial stage of 'reading readiness' in order to begin to read in English. This 'reading readiness' level includes a sufficiently developed English-language vocabulary, phonological and phonemic awareness in relation to the English language, as well as initial awareness of the alphabetic principle (Snow *et al.*, 1998).

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ARTICLE 2

PHONOLOGICAL AWARENESS IN SOUTHERN SOTHO LEARNERS: LANGUAGE-SPECIFIC DIFFERENCES AFFECTING THE ACQUISITION OF EARLY READING SKILLS IN ENGLISH AS L2 – A LITERATURE STUDY

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PHONOLOGICAL AWARENESS IN SOUTHERN SOTHO LEARNERS: LANGUAGE-SPECIFIC DIFFERENCES AFFECTING THE ACQUISITION OF EARLY READING SKILLS IN ENGLISH AS L2

2.1 INTRODUCTION

The literacy development of learners from non-English-speaking backgrounds has been an important issue in South African education since the new democratic dispensation in 1994. The Constitution of the Republic of South Africa (Act 108 of 1996) guarantees lifelong and quality education to all South African learners. As part of a new educational dispensation, Outcomes Based Education (OBE) was introduced with the aim to develop the full potential of every South African learner. The current recommended approach to the development of literacy skills of all South African learners is an additive approach to multilingualism which specifies that:

- All learners learn their home language and at least one additional official language.
- All learners become competent in their additional language, while maintaining their home language.
- All learners learn an African language for a minimum of three years by the end of the General Education and Training Band (Department of Education, 2000).

It is recommended that the learner's home language should be used for learning and teaching whenever possible, in particular during the Foundation Phase where learners learn to read and write. According to the Revised National Curriculum Statement (NRCS), 'the curriculum develops learners' ability first of all to understand and speak their first language. When children begin learning an additional language, they acquire it mainly through oral language skills. For example, listening to stories and listening to the sounds of new words in the L2. On this foundation it builds literacy' (Department of Education, 2000:9). Early reading skills therefore include abilities such as phonological awareness, which is considered a crucial precursor to becoming

literate in any language (Bialystok, 2001). According to the NRCS, learners will then be able to use L1 language skills as metalinguistic skills to support the acquisition of literacy skills in their first additional language.

In contrast to the South African government's professed view of the importance of mother- tongue instruction, and as part of the legacy of the policies of Bantu education, African L1 learners transfer to English as language of learning and teaching at the beginning of grade 4. Research studies investigating the universal and language-specific characteristics of literacy development found that phonological awareness skills make a significant contribution to the acquisition of early literacy skills in languages with transparent orthographies (African languages), as well as in languages with opaque orthographies (English) (Wimmer & Goswami, 1994; Wagner & Torgesen, 1987). It therefore seems as if the development of phonological awareness skills may benefit all South African learners irrespective of the language in which they start their initial reading instruction.

There are, however, fundamental differences between African languages and English, which have European roots. African languages are not only phonetic languages (representing transparent orthographies), but also display phonological, structural and orthographic differences with regard to English (representing an opaque orthography). African learners transferring to English as L2 at the beginning of grade 4 thus face immense challenges to becoming proficient in English as a second language during the early literacy phase. This article addresses the issue of language-specific differences between Southern Sotho and English affecting the development of early reading skills, such as phonological awareness skills, in English as a second language.

2.2 RESEARCH PROBLEM AND QUESTIONS

Second-language learners do not categorise sounds phonemically with the efficiency of a mother-tongue speaker. For example, the phonemic inventories of languages are language-specific. Children store and memorise the different sounds that are part of their L1. It may therefore be more difficult to acquire

the internal sound structure of a second language when the L1 and the target language display no similarities or cognates. It can be predicted that phonetic differences between the L1 and the target language will be much more difficult to process, leading to problems in spoken and written language (Jannuzi, 1998).

With these problems in mind, the following research questions are formulated:

- To what extent will language-specific differences that exist between English and Southern Sotho affect the development of early reading skills in English as a L2?
- Will L1 language skills transfer or interfere in the development of phonological awareness skills in Southern Sotho learners in English as a second language?

2.3 AIM OF THE RESEARCH

The present study examines the development of phonological awareness skills in ESL learners and how language-specific differences affect the acquisition of early reading skills in English as L2. The article examines how language-specific differences between Southern Sotho and English affect the development of phonological awareness skills in Southern Sotho learners in English as L2.

2.4 VALUE OF THE RESEARCH

The advantages of well-developed phonological awareness skills in reading acquisition have been extensively researched internationally. Results of these studies indicate that the advantage of being phonologically aware is that the learner becomes aware of the internal sound structure of words, which leads to better word recognition in spoken and written language (Jannuzi, 1998; Spector, 1995; Adams, 1990; Mann & Brady, 1988).

This cross-linguistic research study will have the following value:

- The identification of language-specific differences at phonological level between the two languages leads to the development of metalinguistic knowledge and skills in Southern Sotho learners in order to support and accelerate the acquisition of early reading skills in English as a L2.
- The identification of difficulties and errors of Southern Sotho learners in developing phonological awareness skills in English as L2 may lead to the restructuring of language programmes. This will make an important contribution to curriculum development in South Africa.

2.5 CONCEPT CLARIFICATION

Alphabetic principle

This refers to the understanding that letters represent sounds and that a word has a sound structure consisting of individual sounds. Alphabetic understanding and phonological awareness become the larger construct, the alphabetic principle.

Cognates

This refers to forms that are descended from the same proto-language form in related (sister) languages. For example, English and German are both descendants of Proto-Germanic. The words 'to' and 'zu', 'ten' and 'zehn', 'hound' and 'Hund' will therefore show similarities in their form and pronunciation. Xhosa, Sotho and Swahili descend from the Eastern branch of the Niger Congo family, and these languages also display similarities, e.g. the word 'person' in Xhosa is 'umuntu', in Sotho, 'motho' and in Swahilli 'mtu'.

Conjunctive orthographies

This refers to the conjunctive way of writing words in a language; i.e. parts of speech (clauses or words in the same clause) are joined together. For example the Zulu word 'wayesezofika'. In South Africa words in the Nguni languages (Zulu, Xhosa, Swati and Ndebele) are written conjunctively.

Consonant clusters

This refers to a group of three successive consonants appearing at the beginning of words. For example, in English, words such as 'string', 'spring' and 'shrewd'.

Consonant blends

This refers to two successive initial or final consonants in words. For example, in English, words such as 'blend', 'spend', and 'splint'.

Decoding

This refers to the translation of individual letters and/or groups of letters into sounds in order to access the pronunciation of a word.

'Deep' orthographies (also referred to as opaque or inconsistent orthographies)

This refers to orthographies of languages in which words have many irregular sound-symbol relationships, e.g. in English words such as 'light' and 'enough' sounds do not correspond directly to the symbols that represent them.

Disjunctive orthographies

This refers to the disjunctive way of writing words in a language. Parts of speech (clauses or words in the same clause) are written separately. Although parts of speech are written separately in the Southern Sotho word 'ke lapile', it represents one concept and is therefore regarded as one word. In South Africa words in the Sotho languages (Southern Sotho, Northern Sotho and Western Sotho) are written disjunctively (Louwrens, 1991).

Early reading skills

This refers to 'reading-readiness' skills such as phonological awareness, decoding skills and sight word recognition that are needed in order to become a proficient reader in a language.

ESL

English as a second language.

First language (L1)

This refers to the language a normal child acquires in the first few years of life. Alternatively, it is termed home language, mother tongue.

Language structures

This refers to *universal structures* such as phonological, prosodic, syntactical, morphological, semantic and orthographic structures that are part of all languages in the world. Languages can also be identified by *language-specific structures.* For example, the phonemic inventory of a language is regarded as language-specific as it contains the phonemes that are uniquely part of a language (Goswami, 2003).

Morpheme

This refers to the smallest meaningful unit in a language. A morpheme may be a single phoneme (such as the word 'a'), a prefix or a suffix (e.g. /ad-/, /-ism/) or a single syllable or several (e.g. 'girl' and 'miscellaneous').

Onset-rime

An onset is the initial consonant or consonant cluster in a word and the rime is the vowel sound, as well as the rest of the phonemes in the word. For example, the division of the word 'bright' into onset-rime will be /br/ight.

Phonology

This refers to a study of speech structure in language that includes both the patterns of basic speech units (phonemes) and the rules of pronunciation.

Phoneme

This refers to the smallest unit of sound. Individual sounds in languages may be indicated by a number of symbols, e.g. the /th/ sound in English, and the /ts/ and the /tsh/ sounds in Southern Sotho.

Phonological awareness

This refers to the general understanding that words and syllables consist of a sequence of speech sounds.

Phonological awareness skills

This refers to the ability to perform a variety of graded phonological awareness tasks.

Phonological awareness tasks

This refers to tasks such as segmenting sentences into words, segmenting and blending phonemes in words, identifying initial rhyming and rhyming songs, as well as identifying and manipulating of phonemes in words.

Phonological interference (negative transfer)

This refers to phonological influences from the mother tongue resulting in 'errors, over-production, underproduction, miscomprehension and other effects that constitute a divergence between the behaviour of native and non-native speakers of a language' (Odlin, 1989:167).

Phonological transfer (positive transfer)

This refers to 'any facilitating effects on the acquisition of phonological structures that are due to the influence of phonological similarities in languages' (Odlin, 1989:168).

Second language (L2)

A language acquired or learned simultaneously with, or after, an individual's acquisition of a first language.

'Shallow' orthographies (also referred to as transparent or consistent orthographies)

This refers to orthographies of languages in which sounds in words directly correspond to the symbols that represent them, e.g. African languages are classified as phonetic languages and words display a consistent sound-symbol representation.

Stress-timed language

Stress or accent in words has a semantic function. In English it is used to distinguish nouns and verbs in words like /<u>per</u>mit/ and /per<u>mit</u>/. In contrast in

an *evenly-stressed* language such as Southern Sotho, all words are pronounced with the equal amount of stress.

Syllable

This refers to the typographical or linguistic division of words into groups of letters or sounds. In European languages a syllable refers to a set of sounds that form a part of a word, each part containing a vowel. Syllables in African languages do not need to have a vowel as part of a syllable (e.g. the Southern Sotho word 'mme' can be divided into the following syllables m/me).

Tonal language

A tonal language uses pitch as an element of speech in order to distinguish the meanings of words that are spelled alike but pronounced differently. There are two tonal values in Southern Sotho and they contrast with each other (high or low). A high or low tone in words can change the meaning of a word. For example: 'sèba' (low) means gossip and 'séba' (high) means to be naughty. Tone can also be used to show grammatical relationships (Guma, 1971).

Typology

This refers to the classification of languages according to structural or other characteristics.

2.6 BACKGROUND

2.6.1 Development of phonological awareness in the mother tongue

Phonological processing in a language usually begins at birth and is inherent to normal language development. Recent research studies have found that newborn babies are able to discriminate virtually all the sound contrasts (phonetics) used systematically by the world's languages (Aslin, Jusczyk & Pisoni, 1998). Infants progress from this language-general ability to a language-specific ability that allows them to perceive and eventually produce the sounds of their L1 (Werker, 1999).

Research indicates that by the age of three months, infants show a preference for their own names and are able to discriminate between many detailed and language-specific consonant and vowel features (Jusczyk, 1997). From the age of six months babies start to show a preference for the prototypic vowels of their mother tongue (Kuhl, Williams, Lacerda, Stevens & Lindblom 1992). Phonetic contrasts that are not used systematically in the child's linguistic input will gradually be suppressed. It is suggested that the L1 phonological system acts as a 'sieve', filtering out sounds that are absent in the mother tongue (Trubetzkoy,1969).

At the age of eight to ten months the 'tuning in' to language-specific speech contrasts appears to be related systematically to the "tuning out" of phoneme contrasts outside the child's language (Kuhl, 1994). This will lead to problems experienced by second-language speakers in identifying sounds that are not part of their L1.

During the process of 'tuning in' to the language sounds of the first language the child starts to phonologically code and store language sounds in long-term memory (Torgesen, Wagner, Simmons & Laughon, 1990). Once phonological coding has occurred 'the identities of new phonemes, phonetic sequences represented by the morphemes, words and intonation patterns of the language will be recognised and memorised' (Carroll, 1971:4). Through this process access is gained to the meaning of words and the context in which they are found.

In order to understand and produce language, a child must therefore be able to recognise the sound patterns of a language and the rules for how these sounds correspond to meaning. This ability refers to the implicit awareness of sounds and is part of normal language development (Werker, 1999).

Explicit awareness of sounds, also known as phonological awareness, develops as a result of development of vocabulary. At the pre-literate level (from the age of three to five years), the development of phonological awareness is at the level of the word, syllable and the onset and rime. This developmental sequence at the pre-literate level is similar across languages (Goswami, 2003).

International research findings indicate that phonological awareness is the most significant predictor of reading ability as well as reading disability during the early literacy phase (Moats, 1995; Hurford, Darrow, Edwards, Howerton, Mote, Schauf, & Coffey, 1993; Adams, 1990; Wagner & Torgesen, 1987). Phonological awareness skills represent various dimensions and are measured by means of various tasks such as:

- Segmentation of sentences into words. (How many words are there in the sentence 'Come to my office'?).
- Segmentation and blending of syllables and phonemes in words. (What word would we have if we blend the sounds /t/r/y/ together?).
- Rhyme identification and rhyme production. (What word will rhyme with the words 'boat' and 'goat'?).
- Sound matching. (Is there a /k/ in the word 'strike'?).
- Identification and manipulation of phonemes in words. (What word would we have when we substitute the /m/ sound in the word 'mouse' with a /h/?).

The development of phonological awareness skills is considered to be language-specific (Goswami, 2003). For example, in languages that have a well-defined syllable structure (such as African languages), L1 learners will perform better on segmentation and blending tasks as well as manipulation of phonemes in words in order to support word recognition during the reading process (Durgunoglu & Ohney, 1999). Rapid and accurate word recognition is an essential part of fluent reading, and unskilled decoding usually leads to poor comprehension.

Language-specific differences, such as transparency of the orthography, phonological and morphological differences between languages, will influence the development of phonological awareness in a L2 (Jannuzi, 1998). First-language learners transferring from languages that are fundamentally different from the L2 need direct and specific instruction in order to develop early reading skills in a L2. Language-specific differences between Southern Sotho

and English affecting the acquisition of early reading skills will now be discussed briefly.

2.7 A TYPOLOGICAL COMPARISON OF SOUTHERN SOTHO AND ENGLISH

2.7.1 Introduction

A typological classification groups languages according to their structural characteristics, for example on the basis of morphology, phonology and orthography. The science of classifying languages originated in the nineteenth century and was based on the morphological structure of words (Gray & Wise, 1959). Today languages are grouped into families, branches and other subgroups, using various classification methods. These methods include genetic relationships, similar structural characteristics and geographic proximity (Bauer, 2003).

Typological comparisons of languages provide a basis for estimating the language distance between languages, and predict whether a positive transfer of linguistic knowledge from one language to another will be possible (Odlin, 1989:45). Comparative studies usually focus on grammatical errors of learners in a L2 (Ellis, 1986; Corder, 1981). In many instances however, it became clear that these transfer errors made by learners could not always be explained in terms of the differences that exist between the L1 and L2. Grammatical transfer errors were found to be largely independent of the nature of their mother tongue and could be regarded as part of a normal developmental process in the acquisition of a L2 (Corder, 1981:2).

However, it is argued that most phonological errors can be explained in terms of L1 influence, and 'similarities in the phonology of different languages will result in positive transfer, whilst differences between languages may lead to negative transfer' (Odlin, 1989:127). Phonological interference includes items such as accent, stress, intonation and speech sounds from the first language influencing a second language (Berthold, Mangubhai & Batorowicz, 1997). According to Corder (1981:71), phonological transfer errors 'can be accounted

for by the transfer of the articulatory and perceptual habits of the mother tongue to the interlanguage (and eventually to the L2), since the interlanguage phonological system created by the learner will be influenced by his phonetic habits'. Phonological transfer from the L1 therefore add to the problems of second-language learners when acquiring phonological awareness skills in a second language. Language-specific differences between Southern Sotho and English affecting the positive transfer of linguistic skills to English as L2 will be discussed briefly.

2.7.2 Genetic classification

A genetic or historical classification indicates that languages have originated from a common ancestor. A genetic class or language family often shares structural characteristics.

2.7.2.1 Southern Sotho

The Niger-Congo language group of Africa, mostly spoken in sub-Saharan Africa, represents one of the world's largest language families. It includes the Bantu languages comprising more than 1 500 languages and dialects (Collings, 1998). A prominent sub-group is the Sotho language group consisting of Northern Sotho, Western Sotho and Southern Sotho. Other language groups in South Africa are the Nguni language group consisting of Zulu, Xhosa, Swati and Ndebele, and the Venda-Tsonga language group consisting of Tsonga and Venda. Speakers in a language group understand each other because of the many structural similarities and cognates between the languages. Southern Sotho was one of the first African languages to be reduced to writing, and it has an extensive literature. Today the written language in Southern Sotho is based mostly on the Kwena and Fokeng dialects (Olivier, 1999). Approximately three million South Africans are Southern Sotho mother-tongue speakers. Southern Sotho is also the official language of the Kingdom of Lesotho (Olivier, 1999).

2.7.2.2 English

The Indo-European language family includes most of the languages of Europe and Northern India and has the following subfamilies: Italic, Germanic, Celtic,

Hellenic, Baltic, Slavic, Armenian, Albanian, Indo-Iranian, Hittite (extinct), and Tokharian (extinct) (Collings, 1998). English originated from the Germanic language family which includes well-known European languages such as German, Italian, French, Dutch and Afrikaans. English is used extensively throughout the world. As a result there are many varieties of English with varying accents, vocabulary and usage. English was introduced in South Africa in the nineteenth century with the arrival of the British settlers. Today English is the primary language of government, business and commerce in South Africa. It is also the preferred medium of instruction for many South African schools and tertiary institutions (Gough, 1995). Approximately four million South Africans use English as their first language.

Southern Sotho and English, two of the eleven official languages of South Africa, display significant language-specific differences due to their genetic classification (origin). It can be predicted that these differences will impact on the development of literacy skills of Southern Sotho learners when they are confronted with English as medium of instruction.

2.7.3 Structural differences between Southern Sotho and English

A typological classification according to the structural characteristics (morphology) in languages indicates the different ways in which words can be formed in languages. The way words are formed in languages influences the development of early reading skills, such as phonological awareness skills, as well as the ability to perform phonological awareness tasks. Languages are classified into analytic and synthetic language types, indicating how words are formed in a specific language. Words in analytic languages represent a sequence of free morphemes; i.e. prefixes or suffixes are not used to compose words (e.g. Chinese). By contrast, synthetic languages make use of many morphemes to form words. Synthetic languages can be subdivided into islolating, fusional, infixing, agglutinative and polysynthetic morphological varieties (Bauer, 2003; Gray & Wise, 1957). There are, however, few pure language types and many languages represent a mixture of these morphological varieties. Southern Sotho and English are both classified as

synthetic languages displaying characteristics of different morphological varieties in word formation. The different ways that words are formed in Southern Sotho and English will be examined briefly.

2.7.3.1 Southern Sotho:

Southern Sotho is regarded as an agglutinative language. According to Gray & Wise, (1959:348) 'An agglutinative language is a language in which parts of "words" which superficially resemble inflectional elements have independent meaning of their own. These "words" are, then, really agglutinations of elements which can be added or subtracted from the word complex at will'. Each complete word in Southern Sotho is made up of several bound morphemes which combine in a definite and orderly sequence (Guma, 1971). For example, the word 'moitlami' (a nun or a priest) can be segmented into 'individual elements, each of which with its own position, some meaning and grammatical function' (Guma. 1971:1). All words end in a vowel or the velar nasal /ng/ and begin with single consonants (except one word - 'isao' meaning 'next year'). Due to the morphemic structure of words, morphological analysis of words often precedes or accompanies the teaching of sight-word reading during the early literacy phase. Morphological knowledge as well as phonological awareness therefore support word identification in Southern Sotho.

The identification of word boundaries is a problem area in African languages. Word boundaries are identified differently at school and at university level. In many instances it is necessary to apply not only language-universal word identification tests but also language-specific word identification tests. Some South African linguists support the word identification proposed by Van Wyk (1959) using language-universal word identification tests. Many linguists however, still use secondary word identification tests such as a phonological or a morphological test in order to identify words and word boundaries in Sotho languages. For example, the phonological test proposed by Doke & Mofokeng (1985:36) to identify words in Sotho languages stipulates that 'every complete word in Southern Sotho has a main stress (length) on one of its syllables, and that is typically on the penultimate syllable'. However, many

words in Southern Sotho can not be identified according to the phonological test as proposed by Doke *et al.* According to Van Wyk, basic independent word tests still remain the only valid word identification tests in Sotho languages.

It is important that the issue of word identification is urgently addressed in African languages. There should be a uniform way of identifying word boundaries at all educational levels. Failure to identify words as linguistic units impacts on the development of phonological awareness skills, such as segmentation of sentences into words and segmentation of words into syllables and onsets and rimes. Segmentation skills represent the first level of phonological awareness skills and must be mastered before more complex phonological awareness skills are possible. The ability to perform segmentation tasks is an important phonological awareness skill because it helps learners identifying word boundaries, developing the alphabetic principle (link sounds with symbols), indicating pronunciation as well as the spelling of words in Southern Sotho.

It is important to note that in Southern Sotho, syllables in words are found between the same vowels e.g. /le-e-to/. The sounds /l/, /m/ and /n/ are all regarded as syllabic and are pronounced as separate syllables if they are followed by an identical phoneme, for example 'môllô' – /mo -l- lô/, and 'mmê' – /m-mê/. The /ng/ at the end of a word is also a separate syllable e.g. 'se-ko-lo-ng'. Syllables in Southern Sotho can therefore be single phonemes and do not always contain a vowel as is the case in European languages.

2.7.3.2 English

English is regarded as a mixed language type and words display characteristics of the isolating, agglutinative as well as the fusional morphological varieties (Bauer, 2003). The English language consists of many root words that function independently in sentences. By contrast, root words are rare in Southern Sotho. Many English words are constructed by adding prefixes and suffixes to root words (For example the words 'danger-ous', order-ly', 'direct-ory', 'found-ation'). Word parts (prefixes and suffixes) indicate the correct division of syllables. In English, syllabification in words often

depends on the meaning and origin of words. Syllables in English always contain a consonant and a vowel, (e.g. /ba/bies/, /wa/ter/). Segmentation of words containing double consonants occur between 'twin' consonants, between consonants that are not digraphs, and prefixes and suffixes are normally separated from their roots. For example, /kit-ten/, /blan-ket/, /ba-ther/, /se-cret/, /un-rest/ and /play-ful/. The difference with regard to syllabification rules between the L1 and English must be taught to avoid confusion for ESL learners transferring from a L1 where a different set of rules are employed to segment words into syllables.

Words in English also display many language-specific word structures, e.g. initial consonant clusters, initial and final consonant blends and rhyme. To support the development of phonological awareness skills in English, various phonological awareness tasks are introduced whereby learners acquire different levels of phonological awareness skills to become aware of the internal sound structure in English words. However, many of these language-specific word structures in English are absent in Southern Sotho. Negative language transfer or interference from Southern Sotho to English as a L2 will impact on the acquisition of early literacy skills in English as L2, in particular if educators are unaware of language-specific differences between the two languages. Specific, direct instruction may alleviate the problematic aspects of linguistic transfer from African home languages to English as a second language.

2.7.4 Phonological differences between Southern Sotho and English

2.7.4.1 The phonemic inventories of Southern Sotho and English

Languages share basic phonological patterns and principles. Vowel systems tend to be symmetrical and all known languages include a minimal vowel system /i,a,u/, or slight variations of them (Lingual Links Library, 2003). Languages also have specific phonological and prosodic structures that uniquely characterise a specific language. For example, the phonemic inventory of a language is language-specific as it contains the specific sounds

of the language (Goswami, 2003). The ability to recognise the specific phonemes in a L1 develops as part of normal language development. However, the development of phonological awareness in a second language may be more difficult, especially if the two languages display few similarities in respect of their phonemic inventories. According to Hempenstall (2003:5), 'awareness at the level of the phoneme has particular significance for the acquisition of reading because of its role in the development of the alphabetic principle. The written word is simply a means of codifying the sound properties of the spoken word. In order to decode the written word, the child needs to appreciate the logic of the writing system and, as a prerequisite, the logic of oral word production'. The different phonemic inventories of Southern Sotho and English therefore influence the development of phonological awareness in English. This may lead to the acquisition of phoneme awareness skills at a later age causing reading problems for ESL learners throughout their school years. The differences between the vowels and consonants in Southern Sotho and English affecting the ability to perform phonological awareness tasks in English are examined briefly .

- **Vowels in Southern Sotho and English**

Southern Sotho and English both have a basic five-vowel set, i.e. [a, e, i. o, u] that represents a wide range of vowel sounds in both languages. Southern Sotho has 13 vowel sounds (eleven vowels plus two semi-vowels). By contrast, English comprises 15 vowel sounds (thirteen vowels plus two semi-vowels). English also comprises eight diphthongs. The following table compares the different vowel sounds of Southern Sotho and English:

Table 1: The vowels of Southern Sotho and English

Southern Sotho (Doke & Mofokeng, 1985:1-33)	**English** (Gray & Wise, 1959:235-250)
[a] – baba (bitter)	[ə] – at
[ɛ] – reka (buy)	[a:] – father
[ɛ] – rekile (bought)	[ɵ] – fell
[ɵ] – tshela (cross)	[æ] – cat
[ɵ] – tshedisa (to make to cross)	[i] – happy
[i] – file (gave)	[i:] – feel
[o] – pota (go round)	[ɪ] – itch, fill
[o] – potile (talk nonsense)	[ɛ:] – bid, third
[ɔ] – ota (to get thin)	[ɵ] – about
[ɔ] – otile (to be thin)	[u:] – shoe, fool
[u] – duma (as in do) (thunder)	[ɔ:] – saw, court
	[ʊ] – put, full
	[ɒ] – cot
	[ʌ] – cut
Semi-vowels: [j] – ya (go), [w] – wa (fall)	Semi-vowels: [j] – jelly, [w] – quit
	Diphthongs: [ɑɪ] – file, [eɪ] – fail, [ɔɪ] – foil, [ɑʊ] – foul, [əʊ] – foal, [ɪɵ] – shear, [eɵ] – share, [ʊɵ] – endure

- **Consonants in Southern Sotho and English**

Southern Sotho and English share the following consonant sounds [b, d, f, k, l, m, n, p, s, t, v, w, and z] (Doke *et al.*, 1985). However, both languages also display unique consonant sounds. Many African languages contain sounds that are foreign to European languages such as the click sounds that originated from the San and Khoi. The vast majority of Southern Sotho consonants are produced by an emission of air from the lungs (Guma, 1971:17). Consonants in English usually have a one-to-one correspondence with the sound they represent but there is rarely a one-to-one correspondence between a letter representing a vowel and the sound of the vowels. ESL learners may experience problems in this area, which may influence the development of phonological awareness skills as well as decoding skills in

English. The following table compares the different consonant sounds in Southern Sotho and English:

Table 2: The consonants of Southern Sotho and English

/ '/ indicates an aspirated consonant sound in Southern Sotho

/*/ indicates a click sound in Southern Sotho

Southern Sotho	English
[b] - baba (bitter)	[b] – baby
[d] – dumela (good day), as in 'donkey'	[d] – donkey
[dʒ] - jala (plant) as in 'jeep', 'job'	[dʒ] – gin, gist, jest
[f] – fofa (fly) as in 'fly'	[f] – file
[h] – hantle (good, well) as in 'house'	[g] – green, girl
[ju] – yunibesiti (university)	[h] – hail
[k'] - kopa (ask)	[k] - curl
[kh] – sekhona (beer pot)	[ks] – lynx
[kxh] – kgaba (spoon)	[kw] - quit, queen
[l] – leka (try) as in 'listen'	[l] – little, late
[m] – madi (blood) as in 'mother'	[m] – mother, whim
[n] – nama (meat) as in 'never'	[n] – never, win
[ɲ] - nyala (to marry)	
[ŋ] – ngaka (doctor)	[ŋ] – wing
[p'] – palama (ride)	[p] - paper
[ph] - phala (flute) – not as in English a /f	[r] – road, rate
[pʃ'] - pjatla (boil)	[s] – sleep
[pʃh] - psha (to dry up)	[sh] – sharp
[r] - rata	[ʃ] - show, push
[s] - seha (to cut)	[ʍ] – which
[ʃ] - leshala (a piece of coal)	[θ] – thigh
[t'] - tima not to give	[ʒ] - leisure, pleasure, regime
[tdʒ] - tjeka (turn)	[t] – tart
[tdʒh] - tjheka (to dig)	[tʃ] – chin, chicken
[th] - thipa (knife)	
[tl] - tlala (hunger)	[ð] – thy
[tlh] - tlhafu (calf)	

[ts'] - tseba (know)	
[tsh] - tshaba – (to be scared)	
* [!] - qoqa (chat)	
* [!h] - qhala (thow out)	
[v] – vouta (vote) as in 'vote'	[v] – vile
[z] – Lezulu (a Zulu)	[z] - zoom, zeal
[ɬ] - hlaba (jab, thrust) as in 'sleep'	[zh] – azure, beige
[c] and [x] - only used in ideophones	

Nearly four decades ago Moulton (1962) classified the types of speech errors of second-language speakers. Taking the classification of Moulton (1962) into account, Odlin (1989:115) identified different types of vowel and consonant errors often made by English second-language speakers. Such errors not only lead to poor performance on phonological awareness tasks in English but also cause comprehension errors during reading tasks. Phonological transfer errors such as phonemic, phonetic and distributional errors arise when the phonemic inventories of the two languages differ to a large degree. The different phonological transfer errors affecting the ability to perform phonological awareness tasks in English as L2 will be discussed briefly.

- **Allophonic errors**

A sound in the first language may not always be an accepted standard of a corresponding target language phoneme resulting in allophonic errors (producing variant sounds of a single phoneme). In L2 acquisition ESL speakers often revert to pronunciation of phonemes that are part of their L1. They tend to pronounce unfamiliar sounds in L2 mostly in terms of a similar sound in their L1 (Odlin, 1989). For example, the final phoneme in a word will be turned into a vowel sound e.g. in the pronunciation of the word 'socca' instead of 'soccer', 'focas' instead of 'focus', and 'neva' instead of 'never'. This may be due to the fact that all words in Southern Sotho end in vowels or /-ng/. The weak schwa vowel [ə] in English is absent in African languages. The vowel systems of African languages only contain the /i:/ sound. The words 'live' and 'leave' in English are differentiated phonemically by the sounds /i/ and /i:/. To African learners these two words will sound identical and will be

regarded as homophones, the meaning determined by context (Arthur, 1994). Words containing the weak schwa vowel, for example words such as 'liver' will be pronounced /leeva/ and 'little' as /leetal/. The inability to differentiate between different sounds in a language leads to errors during phoneme identification and phoneme manipulation tasks resulting in reading, spelling and writing errors.

- **Phonetic errors**

Languages often share corresponding consonants and vowels in cognate forms. Their acoustic properties, however, differ considerably leading to phonetic transfer errors. For example, in Southern Sotho it is necessary to distinguish between aspirated and unaspirated sounds. The symbols /p/, /t/ and /k/ indicate unaspirated or ejective sounds whereas aspirated sounds are represented by the symbols /ph/, /th/, /kh/. In English these letters represent completely different sounds in words. This may be confusing for Southern Sotho learners when applying their mother-tongue knowledge in reading and writing to English. Click sounds in Southern Sotho are represented by the symbols /c/, /q/, /qh/, and /x/. As the letters /c/, /q/ and /x/ in English represent different sounds in words , this will further complicate the ability of ESL learners to match sounds to the correct symbols in English. Phonetic errors lead to difficulties during phoneme identification tasks, thus causing reading and spelling mistakes.

- **Distributional errors**

The sequence of sounds in words in different languages can also differ resulting in distributional errors. For example, the /th/ and /ph/ sounds are familiar in Southern Sotho in words such as 'fenetha', 'fofotho' and 'phoofolo'. When the sounds appear at the beginning in words in English they are pronounced differently. This implies that in words such as 'this' and 'phantom', second-language speakers may struggle to pronounce and identify the sounds correctly.

2.7.5 Prosodic differences between Southern Sotho and English

Prosodic differences influence the ability to perform phonological awareness tasks such as the identification of word boundaries, segmentation of words into syllables, onset-rimes and phonemes when mother-tongue knowledge is transferred in English as L2. Southern Sotho is a tonal language, and tone has a semantic function. Tone is used in two specific ways. First, it is used to differentiate between the meanings of words that are spelled alike but pronounced differently. Secondly, it indicates grammatical relationships (Guma, 1971: 26, 27). Stress and accent play no role in the identification of words in Southern Sotho. On the other hand, stress in English has a semantic function and is used to distinguish between nouns and verbs, for example in words such as 'permit' (noun) and 'permit' (verb), 'conduct' (noun) and 'conduct' (verb). In English different pitches are only used when questions are asked or exclamations are made. Due to the influence of their mother tongue, Africans tend to pronounce English words in an evenly stressed manner. Research reviewed by Cutler (1984, cited in Odlin, 1989:117) indicates that stress patterns play a crucial role in listeners' recognition of words. When L2 speakers do not use a stress pattern that is the norm in the target language, this may lead to problems in correct word identification and comprehension during silent reading. For example, the correct placement of stress in the sentence: 'Kangaroos are dangerous'. If second-language speakers pronounce the word 'dangerous' in the same way as the word 'kangaroos', they may assume that both words refer to animals; not that there is an element of danger when confronting a kangaroo. Pronunciation of the native language therefore exerts a powerful influence on the speech and comprehension of ESL learners. It influences phonological processing abilities such as phonological and phonetic re-coding in English. Errors in phonological re-coding will lead to retrieval mismatches and result in poor phonological awareness skills in English.

2.7.6 Orthographic differences between Southern Sotho and English

In dictionaries words are listed according to their orthography, indicating the correct and conventional spelling of words. An orthography is seen as the 'visual representation of a language and can be defined as the written patterns of a language and their mapping onto phonology and meaning' (Aaron & Baker, 1991:13). Phonic or decoding skills, indicating the relationship between sounds and symbols develop from phonological awareness skills and represent the next developmental stage in reading acquisition. The orthographic structure of a language therefore impacts on the acquisition of early reading and writing skills.

Orthographies can vary in two dimensions, namely:

- The way in which linguistic units are represented by graphemes such as phoneme in an alphabet, a syllable in a syllabary and a morpheme in a logography, and
- Orthographic depth (transparent or opaque representation of sound and symbol) (Koda, 1998).

Both Southern Sotho and English are alphabetic languages, but are represented by contrasting orthographies. Words in Southern Sotho have a consistent sound-symbol correspondence indicating a transparent orthography. English, on the other hand, represents a more opaque orthography. Southern Sotho learners transferring to English may acquire phonological and decoding skills at a later stage when starting reading instruction in English as L2 due to the many irregular sound-symbol correspondences in English words. These learners will also experience problems representing spoken words in their L1 because of the way that words in African languages were coded in the past. During the nineteenth century, missionaries from various church and religious groups took the initiative to make the Bible accessible in the mother tongue for the various African language groups. These missionaries were subsequently responsible for the written orthographies of African languages. Because each missionary worked from his own linguistic frame of reference, the same language, or

closely related language entities were coded differently (Olivier, 1999). For example, Southern Sotho was coded into writing by the French missionaries Casalis and Arbousset from the Paris Evangelical Mission who arrived at Thaba Bosiu in 1833; British missionaries worked on Western Sotho, and German missionaries on Northern Sotho (Olivier, 1999). Writers of African orthographies approached word identification from different perspectives. What some writers regarded as a word, others regarded as formatives (parts of words). Prefixes were written separately, joined together or written with a hyphen. Because of the different ways in which words were represented in African languages, two contrasting language schools, i.e. the conjunctive school and the disjunctive school emerged on the African language scene (Endeman, 1960:17). The disjunctive school writes words as relatively short linguistic units which often occur as autonomous words in languages (e.g. in Southern Sotho the word 'ke a mo rata'). The conjunctive school writes word parts together to form long complex morphological structures, e.g. in Zulu the word 'wayesezofika' (Louwrens, 1991:2). Today, the disjunctive way of writing is accepted as the standard way of writing words in the Sotho languages. The Nguni languages adopted the conjunctive method of writing words. This is mainly due to the phonological differences between the Sotho and the Nguni language groups.

The English language also displays unique language-specific sound-symbol representations. For example, contractions ('let's', 'don't'), silent letters ('knife', 'late'), /-le/ endings (bottle), phonograms ('fight', 'dough'), and inflectional endings ('baked', 'slowest'). The ability to segment words into syllables is a prerequisite skill for structural analysis (decoding skills) in English (Lutrin & Pincus, 2002). Segmentation skills therefore improves reading as well as writing skills in English. For example, to combine inflectional endings with root words and pronounce resulting new words support the development of a sight-word vocabulary (Lutrin & Pincus, 2002). Orthographic differences at word level between Southern Sotho and English will impact on reading as well as writing skills of Southern Sotho learners when transferring to English as medium of instruction. The most significant

language-specific differences between Southern Sotho and English affecting the acquisition of early reading skills in English are summarised in Table 3.

Table 3: Language-specific differences between Southern Sotho and English affecting the acquisition of early reading skills

	Southern Sotho	English	Phonological transfer error	Influence on phonological awareness task
Genetic origin	Niger-Congo	Indo-European		
Language type	Synthetic language. Words display agglutinative characteristics	Synthetic language, mixed type. Words display characteristics of isolating, agglutinative, fusional morphological varieties.	Confusion about word boundaries. Unfamiliar word structures may cause problems performing phonological awareness tasks in English	Segmentation and blending tasks, phoneme identification and phoneme manipulation tasks
Morphology Word formation Word boundaries Language-specific word structures	Words are formed by a series of bound morphemes Confusion about word boundaries Always start with single consonant, end in vowel or /ng/	Root words, prefixes and suffixes Word boundaries easily identified Initial and final consonants, consonant clusters, initial and final consonant blends Rhyme	Confusion about word boundaries, problems identifying syllables and phonemes in words Unfamiliar word structure such as consonant clusters, consonant blends and rhyme in words may lead to problems performing specific phonological awareness tasks in English	Segmentation tasks (words, syllables, phonemes) Blending tasks Phoneme awareness tasks Phoneme manipulation and substitution tasks
Phonology Phonemic inventories Supra-segmental elements (tone, accent and stress)	Many language-specific phonemes (e.g. click sounds) Tonal language Evenly stressed Tone - semantic function	Many language-specific phonemes (e.g. diphthongs and digraphs) Stress-timed language Stress – semantic function	Phonemic errors (allophonic errors), phonetic errors, distributional errors Supra-segmental errors	Phoneme awareness tasks, syllable segmentation, onset-rime, segmentation, blending tasks Identification and production of rhyme Phoneme identification and manipulation tasks
Orthography	Alphabetic language Transparent Disjunctive Formatives (parts of words) regarded as words at school level	Alphabetic language Opaque Conjunctive Language-specific sound-symbol representation (silent letters, phonograms)	Reading, writing and spelling errors	Identification of word boundaries, syllable segmentation, syllable blending and phoneme awareness tasks

2. 8 SUMMARY AND RECOMMENDATIONS

It is clear that phonological, morphological as well as orthographic differences between English and Southern Sotho significantly influence the development of phonological awareness skills in English as L2 as well as the ability to perform phonological awareness tasks in English. Language-specific word structures (e.g. final consonants, initial consonant clusters, initial and final consonant blends and rhyme in English) seem to influence the level, rate as well as the age at which ESL learners develop phonological awareness skills in English as L2. Southern Sotho learners subsequently need direct and specific instruction to ensure a positive transfer of linguistic skills from their L1 to support the acquisition of similar linguistic skills in English as L2. Failure to acquire these skills may result in reading difficulties throughout their school years.

It is recommended that:

- Language educators should obtain as much information as possible regarding the pronunciation system of their learners' first language, and compare it with that of the sound system of English. If distinctions at phonological level between the first language and a second language are not formally taught and specified, ESL learners will find it difficult to acquire the internal structure of words to support word identification skills in English.
- Educators of ESL learners must acquire a broad repertoire of skills for teaching the grapheme-phoneme relationships in English to learners who may be unfamiliar with the English sound system. A component of these skills must be the ability to make learners aware of the differences in the sound and spelling systems of the L1 and English as a L2.
- Southern Sotho learners should develop phonological awareness by means of activities that support not only reading but also writing skills in order to improve all language skills in English.

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3.1 INTRODUCTION

South Africa represents a multilingual society, and South African schools should meet the language needs of all South African learners. It is therefore critical that every learner acquires the basic literacy skills necessary to experience early reading success. For many South African second-language learners, this involves literacy development in the mother tongue as well as in English as a second language. According to the South African government's language-in education policy, African learners transfer to English medium of instruction at the start of their fourth year of schooling (Department of Education, 1997). All African learners are thus taught in a medium of instruction other than their mother tongue, which poses great challenges to both South African educators and learners.

3.2 BACKGROUND

African languages are regarded as phonetic languages representing transparent orthographies. African learners who receive instruction in their mother tongue have the benefit of learning to read in a phonetic language with a well-developed syllabic structure, often resulting in early reading success. Research indicates that the syllable is an important unit in the development of phonological awareness in languages which represent transparent orthographies such as Spanish, Italian and African languages (Mora, 2001). The pronunciation of a unit (syllable) can be taken directly from the print, and as a result, reading instruction in a phonetic language is often based on the recognition of syllable units. Furthermore, in such languages, there is only one correct pronunciation and one correct spelling for every word (Mora, 2001). The ability to segment words into syllables is therefore regarded as an important predictor of learners' future reading ability in languages representing transparent orthographies.

By contrast, languages with opaque orthographies represent different challenges to beginner readers. American and European research studies reporting on the advantage of early reading skills, such as phonological awareness skills, mainly focus on reading development in languages representing opaque orthographies, such as English (Goswami, 2003; Adams, 1990; Wagner & Torgesen, 1987). Previous research findings regarded pre-school awareness of syllable and rhyme to be a significant predictor of reading development in English (Bradley & Bryant, 1983). Current research, however, indicates that segmentation and rhyming are separate abilities in the phonological awareness domain (Muter, 2004). Segmentation and manipulation skills are thus found to be better predictors of early reading ability in English than rhyme awareness (Muter, 2004). It is suggested that the ability to identify rhyme makes a separate contribution to the reading and writing processes at a later stage (e.g. the use of rhyme analogies will help learners to read and spell English words correctly).

In order to support emerging bilingual readers, it is therefore important that early reading skills be developed within the appropriate phonological context of each language (Mora, 2001). Research indicates that phonological awareness is the most important causal factor that predicts reading ability as well as reading disability during the early literacy phase (Muter, 2004; Goswami & Bryant, 1990; Adams, 1990; Wagner & Torgesen, 1987). In addition, numerous research studies confirm that children who develop strong phonological awareness skills during the pre-literate phase learn to read more easily than children with poor phonological awareness skills (Adams, 1990; Bradley & Bryant, 1983). It also appears that phonological awareness and reading ability display a reciprocal relationship. Learning to read not only has a measurable impact on the development of phonological awareness skills, but phonological awareness skills also supports word identification during the reading process (Morais, Alegria & Content, 1987; Perfetti, Beck, Bell & Hughes, 1987).

Correlational studies investigating the relationship between phonological awareness and reading ability often have a dual purpose. Such studies are undertaken first to predict reading achievement at a later stage (MacDonald & Cornwall, 1995; Wagner, Torgesen, Laughon, Simmons, & Rashotte, 1993), and secondly, to indicate the

relationship between aspects of reading ability and dimensions of phonological awareness (Smith, Simmons & Kameenui, 1998).

It can be argued that language-specific structures such as orthographic, phonological and morphological structures that uniquely identify a language may influence the correlation between early reading skills and aspects of reading ability in a specific language. For example, structural awareness (morphological knowledge) plays a significant role in word identification during the reading process in African languages. Morphological as well as phonological awareness therefore influence the correlation between early reading skills and reading ability in African languages. By contrast, phonological awareness is regarded as one of the most reliable predictors of reading success in English.

3.3 AIM OF THE RESEARCH

The aim of the study is to:

- Examine the performance of Southern Sotho mother-tongue instruction (MTI) and English medium instruction (EMI) learners on the various sub-tests of phonological awareness tests in Southern Sotho and English. The results will indicate how language-specific differences between Southern Sotho and English affect the level of phonological awareness skills of these learners in English as L2.
- Correlate the emergent levels of phonological awareness of grade 3 Southern Sotho learners and an early reading ability, namely sight-word reading in Southern Sotho and English. The results will indicate how language-specific differences influence the correlation between phonological awareness and sight-word reading in each research group.

3.4 CONCEPT CLARIFICATON

Consonant clusters

This refers to a group of three successive consonants appearing at the beginning of words. For example, in English, words such as 'string', 'spring' and 'shrewd'.

Consonant blends

This refers to two successive initial or final consonants in words. For example, in English, words such as 'blend', spend, and splint. Consonant blends are absent in Southern Sotho.

'Deep' orthographies (also referred to as *opaque* or *inconsistent* orthographies).

This refers to orthographies of languages in which words have many irregular sound-symbol relationships, e.g. in English words such as 'light' and 'enough' sounds do not correspond directly with the symbols representing them.

ESL

English as a second language.

English medium of instruction (EMI)

This refers to English as language of learning and teaching.

Early reading skills

This refers to 'reading readiness' skills such phonological awareness, decoding skills and sight-word reading necessary to become a proficient reader in a language.

First language (L1)

This refers to the language a normal child acquires in the first years of life. Alternatively termed home language, mother tongue.

Mother-tongue instruction (MTI)

This refers to Southern Sotho as language of learning and teaching.

Phonological awareness

Phonological awareness refers to the general understanding that words and syllables consist of a sequence of speech sounds.

Phonological awareness skills

This refers to the ability to perform a variety of graded phonological awareness tasks.

Phonological awareness tasks

This refers to tasks such as segmenting sentences into words, segmenting and blending phonemes in words, identifying initial rhyming and identifying and

manipulating phonemes in words.

Reading acquisition:

This refers to the process whereby a learner acquires basic skills necessary for reading.

Second language (L2)

This refers to a language acquired or learned simultaneously with, or after, an individual's acquisition of a first language.

*'Shallow' orthographies (*also referred to as *transparent* or *consistent* orthographies). This refers to orthographies of languages in which sounds in words have a direct correspondence with the symbols representing them, e.g. African languages are classified as phonetic languages and display a consistent sound-symbol representation in words.

Sight words

This refers to the ability to rapidly and accurately recognise words without the use of analysis techniques (such as sounding out words or segmenting words into syllables).

3.5 RESEARCH METHODOLOGY

3.5.1 Population and sampling

Two groups of participants were identified, each consisting of grade 3 Southern Sotho learners. Group A consisted of 62 grade 3 Southern Sotho MTI learners, and Group B consisted of 58 grade 3 Southern Sotho EMI learners. There was an approximate equal distribution of boys and girls in each group.

3.5.2 Selection criteria

Permission to conduct this study was granted by the Free State Department of Education. With the assistance of the Department, functional schools within reach of the Free State University were selected. The principals voluntary agreed to participate in the research study. Letters to obtain permission from parents for the participation of learners in the research study were also handed out. The principals however, explained that feedback from parents is generally very poor, and preferred not to hand out the forms for parental consent. The following selection criteria were used for the participants:

- Grade: Only grade 3 learners
- Age: 9 to 10 years
- Home language: Southern Sotho

The test procedure was then explained to the grade 3 learners. Learners voluntarily participated. The researcher also undertook to provide feedback to the principals and interested staff members concerning the results of the research, and to keep the identities of the participants and the selected schools confidential.

3.5.3 Research procedure

The learners were tested at the end of the second term (May/June 2004). The researcher was assisted by three fully bilingual Southern Sotho-speaking examiners. The test instruments (cf. 3.6) are oral tests, except for a written non-word spelling test on the SEPAT and the SPAT (sub-test 13). The tests were administered individually in a quiet room on the school premises. It took approximately thirty to thirty-five minutes to test each learner.

3.6 MEASURING INSTRUMENTS

At present there are no standardised phonological awareness tests available in South Africa. For the purposes of this study, phonological awareness was assessed in both Southern Sotho and English by means of two different phonological awareness tests, namely: the Sutherland Phonological Awareness Test (SPAT, 1995), and the Southern Sotho Phonological Awareness Test (SEPAT), 2004.

3.6.1 The Sutherland Phonological Awareness Test (SPAT), 1995

This test was developed in Australia and standardised for Australian learners from kindergarten to grade 3. The normative sample also consisted of English second-language learners. Permission to use the SPAT for this research was obtained from Dr. Roslyn Neilson who developed and standardised the test. The first four-sub tests consist of phonological awareness tasks at the preliterate level of the syllable and the onset-rime (such as syllable counting, rhyme detection, rhyme production and identification of a first phoneme in a word). The next four sub-tests include phoneme awareness tasks on the phonemic level (such as phoneme segmentation and phoneme identification of consonant-vowel-consonant (CVC) words). The following section (sub-tests 9-11) also includes phonological awareness tasks on the phonemic level. For example, segmentation of consonant-consonant-vowel-consonant (CCVC) words into phonemes and deletion of a first and second phoneme in CCVC words. The final two sub-tests (12 and 13) consist of a non-word reading and spelling test. The test properties are:

- Test reliability (Cronbach's Alpha): 0,96.
- Correlation between phonological awareness on the auditory tasks

  (sub-tests 1–11) and word skills in non-word reading and spelling (sub-tests 12 and 13): r = +0.82.
- Correlation between total SPAT scores and Word Identification skills (Woodcock Reading Mastery Test): r = +0.75.

3.6.2 Southern Sotho Phonological Awareness Test (SEPAT), 2004

A diagnostic, non-standardised test was modelled on the SPAT and developed by the researcher with the assistance of Prof. J. G. Gildenhuys, former Head of the Department of African Languages at the University of the Free State. Sub-tests 2 and 3, namely rhyme identification and rhyme production, were included in the SEPAT in order to produce a phonological awareness test in Southern Sotho that closely resembled the SPAT. Sub-test 11 was changed into a phoneme substitution test, as there are no consonant blends in Southern Sotho words.

Test properties of the SEPAT are not available.

3.6.3 Sentence Segmentation Test (SST), 2004

Phonological awareness skills always start with the ability to segment sentences into words (Hempenstall, 2003; Adams, 1990; Wagner & Torgesen, 1987). The ability to segment sentences into words indicates the readiness of learners to start developing phonological awareness skills in L1 and L2. The SPAT, however, does not include segmentation of sentences into words as a sub-test. To address this need, a diagnostic, non-standardised test was developed as a screening test by the researcher with the assistance of Prof. J.G. Gildenhuys. The test includes three sentences in Southern Sotho and three sentences in English. Test properties for the SST are not available.

3.6.4 A standardised Sesotho Reading and Spelling Test (SRST), 2002

The Sesotho Reading and Spelling Test is standardised for Southern Sotho learners from grades 1 – 3. Only the reading test was used in order to determine the sight-word vocabulary of the learner. The reading test includes 20 sight words that must be recognised without the use of analysis techniques. One mark is allocated for every correct response and raw scores are converted into a stanine by using the appropriate norm table of the specific grade. The test properties for the SRST are described in Annexure F.

3.6.5 A standardised reading and spelling test for English and Afrikaans learners (ESSI), 1997

The ESSI is an English reading and spelling test standardised for grades 1-7 English mother-tongue learners. Only the reading test was used to test sight-word reading. The reading test includes 20 sight words that must be recognised without the use of analysis techniques. One mark is allocated for every correct response and raw scores are compared with the table of norms for that specific grade. The marks are also converted to a stanine by using the appropriate norm table for the specific grade. Currently no standardised English second-language reading and spelling tests are available for grades 1-3 learners in South Africa. The ESSI was therefore used to determine the sight-word reading ability of grade 3 Southern Sotho EMI learners. Test properties for the ESSI are described in Annexure E.

3.7 STATEMENT OF RESEARCH QUESTIONS

Southern Sotho and English display significant language-specific differences with regard to their phonological structure. Southern Sotho learners may therefore experience problems processing and identifying unfamiliar sounds in English with the efficiency of an English L1 speaker. African languages and English also display structural and orthographic differences that pose additional challenges to beginner readers in English as a L2. Based on the above discussion, the following research questions are formulated:

3.7.1 Research question 1:

Will language-specific differences between Southern Sotho and English affect the level of phonological awareness skills of Southern Sotho learners in L1 and in English as a L2?

The mean of raw scores of Southern Sotho learners on the individual sub-tests of the SPAT and the SEPAT will indicate the level of phonological awareness of Southern Sotho learners in both languages. The mean of raw scores on the sub-tests of the SEPAT and the SPAT will be the arithmetic mean (Huysamen,1988:21).

3.7.2 Research question 2:

Will language–specific differences impact on the correlation between phonological awareness skills and sight-word reading in Southern Sotho and in English as a L2?

Two correlations were drawn to investigate the relationship between phonological awareness and sight word reading, namely:

- **Correlation 1:**

The correlation between the performance of groups A and B on the sub-tests of the SEPAT and SPAT and sight-word reading in Southern Sotho and in English, and

- **Correlation 2:**

The correlation between the results from Southern Sotho MTI and EMI learners in the oral tests (sub-tests 1 – 11) and the non-word reading and writing tests (sub-tests 12 and 13) of the SEPAT and the SPAT.

To determine the correlation between phonological awareness and sight-word reading in Southern Sotho and in English as a L2, the Pearson product moment correlation (r) was calculated for each research group (Mulder, 1981:73).

To further investigate whether the relationship between the two variables for the two groups differed, Fisher's r-to-z transformation was used (Huysamen, 1983:170).

3. 8 DISCUSSION OF RESULTS

3.8.1 Biographical information

A biographical questionnaire was completed for every participant supplying information concerning learners' date of birth (to verify age), home language(s), and attendance of a pre-school or day-care centre. Additional home languages and pre-literate experiences influence the performance of ESL learners on specific phonological awareness tasks in English as a second language (for example, the ability to segment words into syllables, and to identify and manipulate phonemes in words) (Jannuzi, 1998).

The results from the biographical questionnaire revealed that Western Sotho (Setswana) is often spoken as an additional home language in the Free State. Xhosa and Zulu (languages from the Nguni language group,) were also reported as additional home languages. Only four participants from Group B indicated that English was their additional home language. Southern Sotho EMI learners therefore have limited exposure to the sounds of English, except during school hours. This situation may cause a delayed development of early reading skills, such as phonological awareness skills, during the early literacy phase.

The majority of Southern Sotho learners in both groups also attended a pre-school or a day-care centre prior to entering grade 1. Pre-shools in the informal settlements Bloemfontein mostly function as day-care centres. Learners attending these day-care centres are not prepared for formal schooling by means of a bridging programme during their pre-school year.

By contrast, Southern Sotho learners attending English-medium schools in Bloemfontein are prepared for grade 1 by means of a school readiness programme during their pre-school (grade R) year. Many English-medium schools in

Bloemfontein require learners to attend grade R prior to grade one in order to be admitted as a learner at an English- medium school. The following table indicates the results of the biographical questionnaire.

Table 1: Biographical information

	Other languages spoken at home	Attendance of pre-school or day-care centre
Group A **Southern Sotho MTI learners**	**Setswana** **Xhosa** **Zulu**	**70% of Southern Sotho learners attended a day-care centre**
Group B **Southern Sotho EMI learners**	**English** **Afrikaans** **Setswana** **Xhosa** **Zulu**	**80% of ESL Southern Sotho learners attended pre-school**

3.8.2 RESEARCH QUESTION 1

3.8.2.1 Introduction

According to Goswami (2003), the development of early literacy skills, such as phonological awareness skills, is influenced by specific linguistic structures in a language. For example, in languages that have a well-defined syllable structure (such as African languages), L1 learners perform better on syllable segmentation, blending of syllables in words and phoneme manipulation tasks when developing phonological awareness skills in their L1 (Durgunoglu & Ohney, 1999). Learners transferring from a L1 that is different from the L2 may therefore perform poorly on specific phoneme awareness tasks in L2, due to unfamiliar linguistic structures that are not part of their L1.

3.8.2.2 Discussion of the results of the performance of Southern Sotho learners on the SEPAT and the SPAT

The SEPAT and the SPAT were used to determine the performance of Southern Sotho learners on specific phonological awareness tasks in both languages.

- **Table 2** provides a guideline to the interpretation of the results from the SPAT and the SEPAT. The number, followed by the abbreviation for each of the sub-tests, indicates the level and type of phoneme awareness task. For sub-tests 1-13 one point is scored per answer. For sub-tests 1-11 the highest possible score is 4; a score of 3-4 indicates a pass, a score of 1-2 indicates emergent levels of phonological awareness, and a zero score indicates a fail. The highest possible score for sub-tests 12 and 13 is a score of 7.
- **Tables 3 and 4** indicate the level of performance of Southern Sotho learners on the various sub-tests of the SEPAT and the SPAT in each language. Poor performance on specific phonological awareness tasks indicates problem areas due to the influence of language-specific differences between Southern Sotho and English.
- **Tables 5 and 6** analyse the phonological awareness skills of Southern Sotho learners in both languages. The lowest scores indicate the most difficult tasks and the highest scores the easiest tasks.
- **Table 7** compares the performance of Southern Sotho learners in the various sub-tests of the SPAT and the SEPAT.
- **Table 8** compares the performance of Southern Sotho learners in the sight-word reading tests in both languages.

Table 2: Interpretation of phonological awareness tasks on the SPAT and the SEPAT (cf. Annexure A)

Syllabic & sub-syllabic level	**(SC) Syllable counting**	**(RD) Rhyme detection**	**(RP) Rhyme production**	**(IO) Identification of onset**
Phonemic level: consonant-vowel-consonant (CVC) words	**5. (IFP) Identification of final phoneme**	**6. S (1) Segmentation (1)**	**7. (B) Blending**	**8. (DFP) Deletion of final phoneme**
Phonemic level: consonant-consonant-vowel-consonant (CCVC) blends	**9. S (2) Segmentation (2)**	**10. (DFP) Delete 1st phoneme**	**11. (DSP) Delete phoneme**	
Grapheme-phoneme correspondences	**12. (NWR) Non-word reading**	**13. (NWS) Non-word spelling**		

Table 3: Performance of Southern Sotho MTI learners on the SEPAT

Mean of raw scores of Southern Sotho MTI learners on the sub-tests of the SEPAT

Sub tests of SEPAT	1 SC	2 RD	3 RP	4 IO	5 IFP	6 S(1)	7 B	8 DIP	9 S(2)	10 DFP	11 DSP	12 NWR	13 NWS
Highest possible score	4	4	4	4	4	4	4	4	4	4	4	7	7
Mean of MTI learners	3,47	3,03	1,19	2,92	3,26	1,32	2,56	3,52	1,48	3	2,61	4,42	4,40
Mean of boys	3,05	3,37	0,90	3,07	3,17	1,50	2,30	3,50	1,80	3,03	2,60	4,07	4,50
Mean of girls	3,44	2,72	1,47	2,78	3,34	1,16	2,81	3,53	1,19	2,97	2,56	4,75	4,31

Table 4: Performance of Southern Sotho EMI learners on the SPAT

Mean of raw scores of Southern Sotho EMI learners on the sub-tests of the SPAT

Sub tests of SPAT	1 SC	2 RD	3 RP	4 IO	5 IFP	6 S(1)	7 B	8 DIP	9 S(2)	10 DFP	11 DSP	12 NWR	13 NWS
Highest possible score	4	4	4	4	4	4	4	4	4	4	4	7	7
Mean of EMI learners	1,9	3,02	0,72	3,78	3,78	3,19	3,03	3,02	2,91	2,62	1,33	3,19	3,67
Mean of boys	1,79	3,21	0,72	3,69	3,86	3,34	3,07	3,24	3,10	2,72	1,55	3,45	3,90
Mean of girls	2,0	2,90	0,72	3,86	3,69	3,03	3,0	2,79	2,72	2,45	1,10	2,93	3,45

3.8.2.3 Discussion of results: Tables 3 and 4

Southern Sotho has a unique linguistic structure and like all other African languages, is distinguished by its prefix concordial system. Words are formed with the use of many bound morphemes which combine in a definite and orderly sequence (Guma, 1971). English, on the other hand, represents a European language that is fundamentally different from African languages. Some English words are root words that can function independently in sentences, but many words are formed with the use of prefixes and suffixes. When Southern Sotho learners transfer L1 knowledge to develop phonological awareness skills in English, it may lead to a negative transfer or interference. Errors made on specific phonological awareness tasks in English are due to the many language-specific differences between the two languages. The following errors were observed:

- **Segmentation into words**

The identification of word boundaries is a problem area in African languages. To determine the ability of Southern Sotho learners to identify words in sentences, the Sentence Segmentation Test (SST) was developed and administered in conjunction with the SPAT and the SEPAT. The results from the Sentence Segmentation Test indicate that only 14% of the Southern Sotho MTI learners and 44% of the Southern Sotho EMI learners could correctly segment sentences into words. The low percentage (14%) of Southern Sotho L1 learners who identified word boundaries correctly indicates that this basic literacy skill is not taught at school level.

Southern Sotho learners identify word parts as separate words, e.g. 'ke a mo rata' will be four words for a Southern Sotho learner, but at university level this word-group will be regarded as one word (Louwrens, 1991). When Southern Sotho learners transfer to English as a second language (either at the beginning of grade 4 or in English medium schools from grade one), differences at word level may cause problems identifying word boundaries and counting the number of words in a sentence in English. The inability to identify words as basic linguistic units may cause many reading problems for Southern Sotho EMI learners in English as L2.

- **Syllable counting (sub-test 1):**

The ability to segment words into syllables is usually present during the pre-literate phase in most languages (Goswami, 2003). Differences in syllabification rules in Southern Sotho and English will influence syllable segmentation as well as blending

tasks resulting in reading, writing and spelling problems in English. Southern Sotho EMI learners found it very difficult to segment words into syllables and phonemes (sub-test 6 and 9). In many instances, they segmented words into phonemes and not into syllables and vice versa, e.g. the words 'elephant' and 'picnic' in English. The participants in both groups also experienced difficulties in identifying the sounds in words and often said the name of the letters and not the sound in a word.

- **Rhyme detection and rhyme production (sub-tests 2 and 3):**

The identification and production of rhyme and rhyming words are foreign concepts in African languages, because rhyme is rarely employed in African literature, poetry and songs. Rhyming tasks were very difficult for Southern Sotho learners in both groups. Long explanations were necessary before the learners understood what was expected of them. Southern Sotho learners in both groups performed very poorly on the rhyme production task (sub-test 3). Southern Sotho EMI learners also struggled to produce rhyming words with rhyming sounds in English mainly due to their limited English vocabulary.

- **Identification and deletion of final phoneme (sub-tests 5 and 8)**

Phoneme awareness in words usually develops once reading instruction starts in grade 1. The participants in both groups struggled to identify phonemes in words in both languages. Southern Sotho MTI learners found it very difficult to identify phonemes in Southern Sotho words that contain 'hidden' sounds, e.g. the /w/ sound in the words 'shwa' and 'utlwa'. Southern Sotho EMI learners struggled to identify and manipulate sounds in English words because many sounds in English are absent in Southern Sotho.

- **Segmentation of words into phonemes (sub-tests 6 and 9)**

According to Dr. Neilson, sub-tests 6 and 9 (phoneme segmentation tasks) produced unstable results during the standardisation of the SPAT. Southern Sotho learners in both groups also found it difficult to only listen to the sounds (phonemes) in words. Many learners segmented the word 'seat' (sub-test 6) into four 'phonemes' instead of three, because the word 'seat' is spelled with four letters. Southern Sotho learners also struggled to segment English words with initial consonant blends into phonemes (initial and final consonant blends are absent in words in Southern Sotho). For example the words 'spoon' and 'trip' (sub test 9).

- **Deletion of a first and a second phoneme in a word (sub-tests 10 and 11)**

The ability to manipulate phonemes in words is the most sophisticated level of phonological awareness and should be present by the end of grade 3. The participants from Group B found sub-tests 10 and 11 the most difficult to perform due to the fact that consonant blends represent a word structure that is absent in Southern Sotho.

Table 5: Skills analysis of Southern Sotho MTI learners on the SEPAT

The lowest scores indicate the most difficult tasks and the higher scores the easiest phonological awareness tasks.

Highest possible score	4	4	4	4	4	4	4	4	4	4	4	7	7
Southern Sotho MTI learners	**3** 1,19	**6** 1,32	**9** 1,48	**7** 2,56	**11** 2,61	**4** 2,92	**10** 3,0	**2** 3,03	**5** 3,26	**1** 3,47	**8** 3,52	**13** 4,40	**12** 4,42
Boys	**3** 0,90	**6** 1,50	**9** 1,80	**7** 2,30	**11** 2,60	**10** 3,03	**4** 3,07	**2** 3,37	**5** 3,17	**1** 3,50	**8** 3,50	**12** 4,07	**13** 4,50
Girls	**6** 1,16	**9** 1,19	**3** 1,47	**11** 2,56	**2** 2,78	**4** 2,78	**7** 2,81	**10** 2,97	**5** 3,34	**1** 3,44	**8** 3,53	**13** 4,31	**12** 4,75

3.8.2.4 Discussion of results: Table 5

It is clear that Southern Sotho MIT learners experienced problems with the rhyme production task (**sub-test 3**), as well as segmentation of words into phonemes (**sub-tests 6 and 9**). They found sub-tests **1** and **8**, i.e. syllable counting and deletion of an initial phoneme the easiest. The results indicate that the participants are performing at the **phonemic level**, i.e. at the intermediate level, between the syllable and more complex level of phoneme manipulation. The results indicate that the participants have not yet achieved the highest level of phonological awareness in their mother tongue. It can therefore be predicted that these learners will need direct instruction regarding the development of phoneme awareness in their mother tongue in order to support word recognition in Southern Sotho. These learners will also need intensive training concerning the sound-symbol correspondences when they transfer to English as language of learning and teaching at the beginning of grade 4.

Table 6: Skills analysis of Southern Sotho EMI learners on the SPAT

The lowest scores indicate the most difficult tasks and the higher scores the easiest phonological awareness tasks.

Highest possible score	4	4	4	4	4	4	4	4	4	4	4	7	7
Southern Sotho EMI learners	**3** 0,72	**11** 1,33	**1** 1,9	**10** 2,62	**9** 2,91	**8** 3,02	**7** 3,03	**2** 3,05	**6** 3,19	**4** 3,78	**5** 3,78	**12** 3,19	**13** 3,67
Boys	**3** 0,72	**11** 1,55	**1** 1,79	**10** 2,72	**7** 3,07	**9** 3,10	**2** 3,21	**8** 3,24	**6** 3,34	**4** 3,69	**5** 3,86	**12** 3,45	**13** 3,90
Girls	**3** 0,72	**11** 1,10	**1** 2,0	**10** 2,45	**9** 2,72	**8** 2,79	**2** 2,90	**7** 3,0	**6** 3,03	**5** 3,69	**4** 3,86	**12** 2,93	**13** 3,45

3.8.2.5 Discussion of results: Table 6

The participants found sub-tests **3, 11** and **1**, i.e. rhyme production task, syllable counting as well as the phoneme manipulation task very difficult. Sub-tests **4** and **5**, i.e. the identification of an initial and final phoneme was the easiest phonological awareness task. The results indicate that the participants from Group B also perform at the **phonemic** level, i.e. at the intermediate level between syllable awareness and the most sophisticated level of phoneme manipulation. Both groups had the lowest scores on phonological awareness tasks that represent linguistic structures that are not part of Southern Sotho, for example, rhyme production and deletion of a second phoneme in consonant blends. This is a clear indication that language-specific differences between Southern Sotho and English significantly influence the level of phonological awareness skills in English as L2.

Table 7: A comparison of the performance of Southern Sotho MTI learners and EMI learners on the SEPAT and the SPAT

Sub-tests SEPAT	Mean of raw scores	Sub-tests SPAT	Men of raw scores
MTI learners	Southern Sotho	EMI learners	English
Group	37,16	Group	36,16
Boys	37,30	Boys	37,66
Girls	37,03	Girls	34,66

3.8.2.6 Discussion of results: Table 7

According to the interpretation of the mean scores for each grade, both groups performed at grade R to grade 1 level. This indicates approximately a two-year developmental arrear which will impact on the reading ability of Southern Sotho EMI learners in English as L2.

Table 8: A comparison of the performance of Southern Sotho MTI learners and EMI learners on sight-word reading

Southern Sotho sight-word reading SRST Total score: 20	English sight-word reading ESSI Total score: 20
MTI Learners 15,79	EMI learners 4,36
Boys 14,60	Boys 3,93
Girls 16,91	Girls 4,79

3.8.2.7 Discussion of results: Table 8

Reading performance in Southern Sotho was exceptionally good. It was very difficult to determine whether Southern Sotho MTI learners used an analysis technique (such as syllable reading) during the sight-word reading test, because all the words could easily be read by segmenting them into syllables, for example the words 'leleme', 'bapala', 'pina', 'ditaba' and 'dilepe'. By contrast, reading performance in English was very poor. Words in the word list for grade 3 cannot be read with the use of analysis techniques, for example the words 'choruses', 'garage', 'guess'. Many Southern Sotho EMI learners, however, tried to identify words by using the sounding-out technique.

3.8.2.8 Conclusion

It is obvious from the results that Southern Sotho learners in both groups have a lower level of phonological awareness than is expected of grade 3 learners. Southern Sotho MTI learners performed better on the reading task (m = 15,79) than the Southern Sotho EMI group (m = 4,36). The phonemic-transparent character of a language seems to play an important role in the acquisition of early reading skills, such as sight-word reading, during the early literacy phase.

3.8.3 RESEARCH QUESTION 2

3.8.3.1 Introduction

Macdonald & Cornwall (1995) report that the correlation between the performance of English pre-school children on phonological awareness tasks and word-reading skills by the end of grade 1 usually falls in the range of 0.4 to 0.6. This indicates a moderate to a high correlation between two variables (Mulder, 1981:74). The results obtained from this study for both Southern Sotho MTI and EMI learners support the moderate to strong correlation between phonological awareness skills and sight-word reading often found during the early literacy phase. Mulder (1981:75,76), however, cautions against conclusions drawn from these correlational relationships. Even a high correlation (r = 0.6) cannot be taken as an indication that a causal relationship exists between the variables. In most instances, additional factors also contribute to the relationship between the two variables (for example, in this study, language-specific differences between the L1 and the L2).

Table 9 Correlation 1: The correlation between phonological awareness skills and reading ability of Southern Sotho MTI and EMI learners

The correlation between phonological awareness skills and sight-word reading MTI learners (n = 62)	**The correlation between phonological awareness skills and sight-word reading EMI learners (n = 58)**
r = 0.44 (a moderate correlation) **(significant on 1% level)**	**r = 0.62 (a high correlation).** **(significant on 1% level)**
z = -1,375 (not significant on at least 5% level)	

3.8.3.2 Discussion of results: Table 9

Group A (Southern Sotho MTI learners)

The moderate correlation (r = 0.44) that exists between phonological awareness skills and sight-word reading of Southern Sotho MTI learners may be due to the phonetic character of African languages making it easier for beginner readers to experience early reading success. Although Southern Sotho learners performed poorly on the SEPAT, their ability to read sight words was very good. The poor performance of Southern Sotho learners on the SEPAT may also be due to the fact that the development of phonological awareness is still a new educational concept in South Africa (Department of Education, 2000). In spite of the fact that the curriculum prescribes the development of phonological awareness skills, there are no phonological awareness programmes available to support mother-tongue learners in developing phonological awareness skills in African languages.

Group B (Southern Sotho EMI learners)

The correlation between phonological awareness skills of Southern Sotho EMI learners and sight-word reading indicates a stronger relationship (r = 0.62) than in Group A. The poor reading performance of Southern Sotho EMI learners in the English sight-word reading test may be due to the fact the test was standardised for English L1 speakers and that the sight words were too difficult for grade 3 Southern Sotho EMI learners.

In Table 9 (Correlation 1), Fisher's r-z transformation suggests that there is not a significant difference between the relationship for group A and group B.

Table 10 Correlation 2: The correlation between the results from Southern Sotho EMI and MTI learners in the oral sub-tests and the non-word reading and writing tests of the SEPAT and the SPAT

The correlation between the results from MTI learners in the oral sub-tests and the non-word reading and writing tests of the SEPAT	The correlation between the results from EMI learners in the oral sub-tests and the non-word reading and writing tests of the SPAT
r = O.67 (a high correlation) (significant on the 1% level)	r = 0.44 (a moderate correlation) (significant on the 1% level)
z = 1,842 (significant on 5 % level)	

3.8.3.3 Discussion of results: Table 10

Group A (Southern Sotho MTI learners)

The correlation between the results from Southern Sotho L1 learners in the various sub-tests of the SEPAT and the non-word reading and spelling tests indicates a higher correlation (r = 0.67) than observed in Correlation 1 (r = 0.44). The higher correlation may be due to the fact that the Southern Sotho non-words were more difficult to read than the words in the Southern Sotho word list of the SRST (for example, the words' monyomo' and 'ketjhako').

Group B (Southern Sotho EMI learners)

The correlation between results from Southern Sotho EMI learners in the various sub-tests of the SPAT indicates a moderate correlation (r = 0.44). This reflects a weaker correlation than indicated in Correlation 1 (r = 0.62). This may be due to the fact that the English words in the non-word reading and spelling test were easier than the English words on the word list of the ESSI (for example, the words 'ig' 'taf', 'scrad', 'mesk'). The non-words could also be recognised with the use of the sounding-out technique.

In Table 10 (Correlation 2), Fisher's r-z transformation suggests a significant difference (on the 5 % level) in the relationship for these two groups, i.e. a stronger relationship between the variables for group A than for group B (although the correlation coefficient for each group is significant on 1% level).

3.8.3.4 Conclusion

Language-specific differences (such orthographic, morphological and phonological differences) between Southern Sotho and English seem to influence the relationship between phonological awareness skills and reading ability. The role of phonological awareness skills in the acquisition of early reading skills in phonetic languages invites further investigation.

3.9 FLAWS IN THE STUDY

- Absence of standardised tests in Southern Sotho. The SEPAT was modelled on the Sutherland Phonological Awareness Test (SPAT) and includes rhyme detection and the rhyme production tasks that are foreign concepts to Southern Sotho learners.
- Absence of standardised tests in English as L2. The SPAT and the ESSI are standardised tests for English L1 learners. Although ESL learners were also included in the normative sample during the standardisation of the SPAT, Southern Sotho EMI learners struggled to perform phonological awareness tasks often used to test phonological awareness skills in European languages.
- The well-developed syllable structure of Southern Sotho made it very easy for Southern Sotho MTI learners to read the sight words of the SRST. Southern Sotho MTI learners subsequently achieved high scores on the reading test that did not correlate with their scores on the SEPAT.

3.10 SUMMARY AND RECOMMENDATIONS

Language-specific differences between Southern Sotho and English significantly influence the level of phonological awareness skills of Southern Sotho learners, as well as the correlation between phonological awareness skills and reading ability in English as L2. Phonological awareness skills do not seem to play the same crucial role in the acquisition of early reading skills in phonetic languages with transparent orthographies. The development of phonological awareness skills in the mother-tongue, however, forms the foundation on which similar linguistic skills can be developed in English as second language.

Southern Sotho EMI learners do not have the benefit of mother-tongue education during their early school years. Educators at English-medium schools often lack

knowledge of African home languages to support these learners when they start their reading instruction in English as L2. They often fail to point out significant language-specific differences between the mother tongue and English. Southern Sotho EMI learners subsequently need direct and specific instruction to successfully acquire early reading skills. It is recommended that:

- A phonological awareness development programme is introduced from grade R to grade 3 to support the acquisition of early reading skills in L1 and in English as L2.
- Direct and specific instruction be given to Southern Sotho EMI learners regarding the sound-symbol relationship that exists in words in English (phonics instruction).
- The mother tongue should be used as the medium of instruction for as long as possible in order to develop cognitive academic skills in all learners.
- A standardised Southern Sotho phonological awareness test is developed as a diagnostic test to identify Southern Sotho learners who are at risk for future reading problems

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ANNEXURE A

Figure 1. SPAT Total Scores: Means and Standard Deviations, Grades K - 3, mid-year

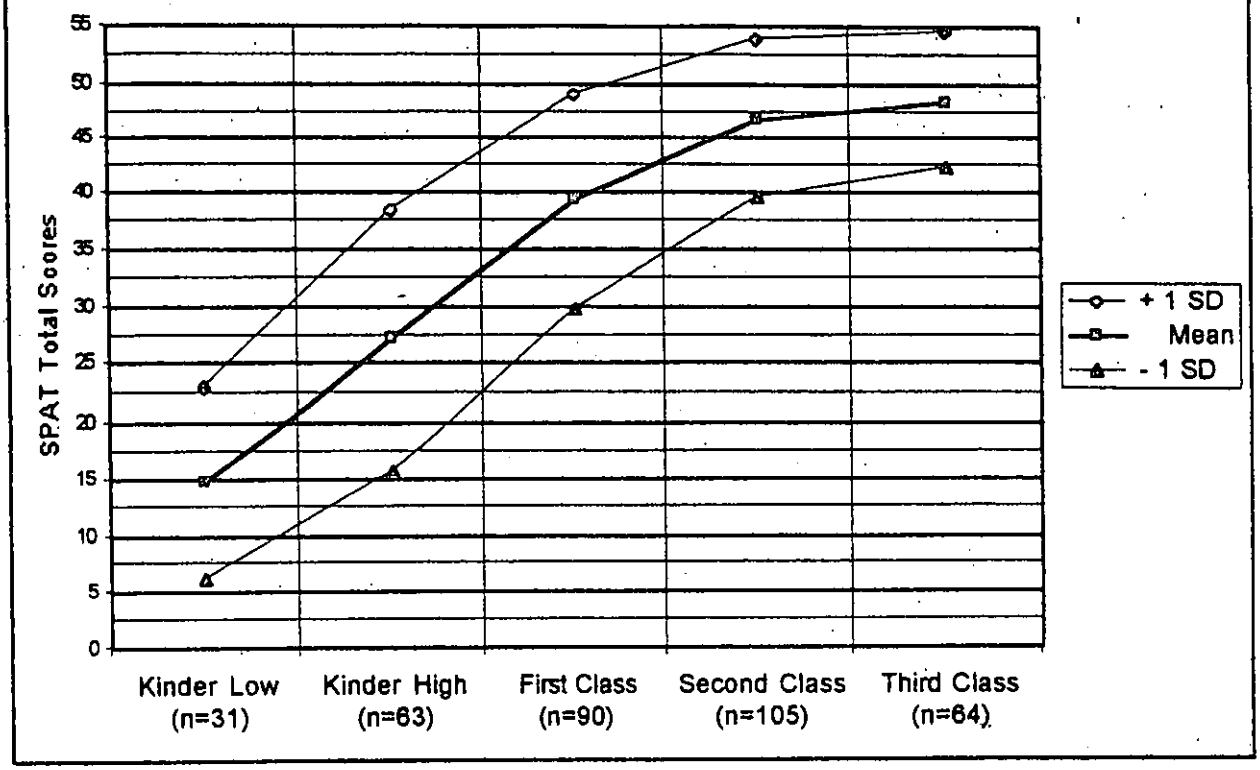

Table 1. SPAT Skills Analysis: Levels achieved on Subtests 1 to 11 by at least 80% of children, Grades K - 3, mid-year.

** Where a cell is asterisked, *over* 20% of the children in that grade failed the subtest.

Subtest		Kindergarten (Low)	Kindergarten (High)	First Class	Second Class	Third Class
1	Syllable Counting	Emergent or Pass	Pass	Pass	Pass	Pass
2	Rhyme Detection	Emergent or Pass	Pass	Pass	Pass	Pass
3	Rhyme Production	**	Emergent or Pass	Pass	Pass	Pass
4	Onset Identification	Emergent or Pass	Pass	Pass	Pass	Pass
5	Final Phoneme Identification	**	Emergent or Pass	Pass	Pass	Pass
6	CVC Segmentation	**	Emergent or Pass	Pass	Pass	Pass
7	CVC Blending	**	Emergent or Pass	Pass	Pass	Pass
8	Onset Deletion	**	**	Emergent or Pass	Pass	Pass
9	CCVC Segmentation	**	**	**	Emergent or Pass	Emergent or Pass
10	Blends: Delete 1st phoneme	**	**	**	Emergent or Pass	Emergent or Pass
11	Blends: Delete 2nd phoneme	**	**	**	**	Emergent or Pass

SCORING AND INTERPRETATION

Total SPAT Score

For subtests 1 to 13, score one point per correct answer, and enter the score for each subtest in the bottom left-hand corner of the subtest sections on the Score Sheet. Add these scores, and enter the Total Score at the bottom of the Score Sheet. Note the child's grade, and refer to Figure 1, overleaf, for interpretation (N.B. norms refer to mid-year achievement levels.) A Total Score that falls more than one standard deviation below the mean for a given grade level indicates a significant weakness in phonological awareness. For children in higher grades, the Third Class level norms may be used as an indication of minimum phonological awareness requirements.

Skills Analysis

For subtests 1 to 11, circle P (Pass, 3 or 4 correct), E (Emergent, 1 or 2 correct), or F (Fail, 0 correct). Refer to Table 1, overleaf, to evaluate the child's performance on each subtest by comparison with grade-level peers. Indicate + or - for each subtest in the bottom right-hand corner of the subtest sections on the Score Sheet. Note: 'Minus' represents the situation where 80% of grade level peers score *higher than* the child does. 'Plus' indicates that the child has achieved a Pass or Emergent score, and a comparable or lower result has been achieved by 80% of peers. Subtests where the child failed, but so did *over* 20% of the peer comparison group, may be left blank. Subtests marked 'minus' thus indicate skills that should be remediated.

Note that the Third Class children in the normative sample did *not* achieve a 'ceiling' of a clear 80% Pass score on subtests 10 and 11; approximately 70% passed and a further 25% scored only at an Emergent level on both the consonant deletion tasks. Interpretation of Emergent scores for 3rd Class children on subtests 10 and 11 may be clarified by reference to the child's success with consonant blends in the non-word reading and spelling items of subtests 12 and 13, since the reading and spelling tasks tend to provide a more sensitive probe of a child's awareness of consonants in blends than the deletion tasks do. In general, if a child achieves only an Emergent score on subtests 10 and 11, and *also* shows difficulties with consonant blends in non-word reading and spelling, remediation should be considered.

In the normative sample the two phonemic segmentation tasks, Subtests 6 and 9, were somewhat unstable in the sense that they were the only two subtests that showed an overall slight decrease in performance from Second Class to Third Class children. Many of the older children found it difficult to focus on *phonemes* when their knowledge of the word's spelling interfered with the phonemic segmentation required. The word 'seat' in Subtest 6 was particularly vulnerable to this source of confusion; indeed, the difficulty with this item started to be evident as early as First Class. The syllabification task, too, was somewhat unstable, with the item 'picnic' generating error responses from many relatively sophisticated children who tended to prefer to segment it at onset and rime level (p..ic..n..ic) instead of breaking it into syllables.

Normative Sample

The *SPAT* was administered to 353 NSW children from Kindergarten to Third Class during July and August 1994, mid-way through the school year, in schools covering a wide range of suburban areas. In NSW Kindergarten is the first year of formal schooling, and children enter Kindergarten at about 5 years of age.

Scores were analysed in terms of grade level achievements for First Class (n = 90), Second Class (n = 105) and Third Class (n = 64). Kindergarten scores were analysed in two groups: Kindergarten (Low), representing the data from an entire class of children who had experienced very little phonological awareness teaching (n = 31), and Kindergarten (High), which comprised children who had had more extensive classroom exposure to tasks involving phonological awareness (n = 63).

Children were included in the sample if they came from homes where languages other than English were spoken, unless their teacher judged that the children did not speak enough English to understand the test instructions. Approximately 20% of the sample were either rated by their teachers to be below average for their grade in literacy skills, or were known to have learning difficulties.

Test Properties

1. Test reliability (Cronbach's Alpha): 0.96
2. Correlation between phonological awareness on the auditory tasks (Subtests 1 to 11) and word attack skills in non-word reading and spelling (Subtests 12 and 13): r = + 0.82
3. Correlation between Total *SPAT* scores and Word Identification skills (*Woodcock Reading Mastery Test*): r = + 0.75

For more information about the sampling, testing procedures and test interpretation, please contact:
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ANNEXURE B

SUTHERLAND PHONOLOGICAL AWARENESS TEST

INSTRUCTIONS: ADMINISTRATION

Each subtest begins with an item demonstrated by the examiner, followed by a practice item on which the child should be corrected if necessary, and encouraged to try again. No corrections are given on test items.

Use Stimulus Page 1 for subtests 1, 2, 6 and 9. Use Stimulus Page 2 for subtest 12. The child's responses on Subtest 13 can be written on a separate piece of paper, then copied onto the test form by the examiner.

Discontinuation guideline: Administer all Section A. Discontinue testing after failure on all four items of any two subtests in Sections B and C. Section D should be attempted unless it is clear that the child will be unable to complete the task.

1* Syllable Counting *Use drum pictures on Stimulus Page 1.

Instructions: "When we say words, we can say them in drum beats. For example, we can say 'kangaroo' like this: 'kan..ga..roo' (tapping the drums). You say 'alligator' and show me the drum beats."
Practice: alligator (4)

1. picnic (2) 2. television (4) 3. elephant (3) 4. supermarket (4)

2* Rhyme Detection *Use rhyming pictures on Stimulus Page 1.

Instructions: "These pictures are about rhyming words. This one is 'cat'. You have to choose the picture that rhymes with 'cat' ... 'bell' or 'bat'? It's bat; cat ... bat."
Note: Name all subsequent pictures for the child.
Practice: pig, *dig*, cup

1. map, *tap*, kite 2. sun, shirt, *gun* 3. fox, *box*, zip 4. wall, fish, *bell*

3. Rhyme Production

Instructions: "Now you have to think of a word that rhymes with the words I say. For example, if I say 'can', 'fan', you could say 'man'."
Note: Non-words are acceptable.
Practice: cat, fat, ...?

1. night, fight, ..? 2. toe, show, ..? 3. bed, red, ..? 4. four, sore, ..?

4. Onset Identification

Instructions: "You have to tell me what sound a word begins with. For example, if I say 'ball, you have to tell me */b/*."
Note: If the child responds with a letter name, say "Yes, but what sound does that make?"
Practice: sun (*/s/*)

1. fat (*/f/*) 2. moon (*/m/*) 3. torch (*/t/*) 4. girl (*/g/*)

5. Final Phoneme Identification

Instructions: "You have to tell me the last sound that you hear in a word. For example, if I say 'game', you have to tell me */m/*."
Note: if the child responds with a letter name, say "Yes, but what sound does that make?"
Practice: boot (*/t/*)

1. bus (*/s/*) 2. cap (*/p/*) 3. roof (*/f/*) 4. duck (*/k/*)

6* Segmentation 1 (VC, CV, CVC) *Use numbers on Stimulus Page 1.

Instructions: "Now you have to break up words into separate sounds. Say the sounds out loud as you tap on the numbers, so that you can tell me how many separate sounds there are in the word. For example, the sounds in 'up' are u... p... - that's 2 sounds."
Note: Encourage child to use sounds, not letter names. Record the actual sounds the child says; score correct only if the phonemes are correct.
Practice: pin (p.. i.. n.. - 3 sounds)

1. am (a.. m.. 2) 2. go (g.. o.. 2) 3. seat (s.. ea.. t.. 3) 4. mug (m.. u.. g.. 3)

7. Blending (VC, CV, CVC)

Instructions: "Join the sounds I say to make a word. For example, if I say 'i... ce...', that makes 'ice'."
Practice: m.. oo.. n.. (moon)

1. s.. ee.. (see) 2. d.. ay.. (day) 3. r.. oa.. d.. (road) 4. g.. a.. te.. (gate)

8. Initial Phoneme Deletion

Instructions: "Now you have to take off the first sound in a word, and say the word that's left. For example, if I say 'boat', and take off the /b/, that leaves 'oat'."
Practice: meat; take off /m/ (eat)

1. tame - /t/ (aim) 2. shout - 'sh' (out) 3. bark - /b/ (ark) 4. mat - /m/ (at)

9* Segmentation 2 (CCVC; CVCC) **Use numbers on Stimulus Page 1.*

Instructions: "Break up these words into separate sounds, just as you did before. Say the sounds out loud as you tap on the numbers. For example, 'sleep' is s... l... ee... p... - that's four sounds."
Note: Encourage child to use sounds, not letter names. Record the actual sounds that the child says; score correct only if the phonemes are correctly pronounced. Note if child pronounces the /t/ in 'trip' as 'ch'; this error need not be penalised.
Practice: snake (s.. n.. a.. ke - 4 sounds)

1. trip (t.. r.. i.. p..) 2. spoon (s.. p.. oo.. n..) 3. beast (b.. ea.. s.. t) 4. bond (b.. o.. n.. d)

10. CCVC Blends: Deletion of First Phoneme

Instructions: "Now you have to take off the first sound again, and say the word that's left. For example, if I say 'play', take off the /p/ - that leaves 'lay'."
Practice: clap; take off /c/ (lap). *Note*: If child says 'ap', repeat the item, emphasising the /l/.

1. smile - /s/ (mile) 2. gruff - /g/ (rough) 3. plate - /p/ (late) 4. swing - /s/ (wing)

11. CCVC Blends: Deletion of Second Phoneme

Instructions: "Now you have to take a sound out of a word, and say the word that's left. For example, can you hear the /r/ in 'brake'? If you take the /r/ out of 'brake', that leaves 'bake'."
Practice: smack; take out /m/ (sack). *Note*: If child says 'ack', remind him/her about the /s/ sound at the beginning.

1. stale - /t/ (sale) 2. plain - /l/ (pain) 3. frog - /r/ (fog) 4. slash - /l/ (sash)

12* Non-word Reading **Child reads non-words from Stimulus Page 2.*

Instructions: "The words on this page aren't real words; they are nonsense words, and you've never seen them before. Try to read them."
Note: Record the child's responses as accurately as possible in the spaces on the Score Sheet. Record any false starts, sounding out, self-corrections, etc., as well as the final response.

13* Non-Word Spelling **Use spare sheet of paper, or back of Score Sheet. Provide a pencil.*

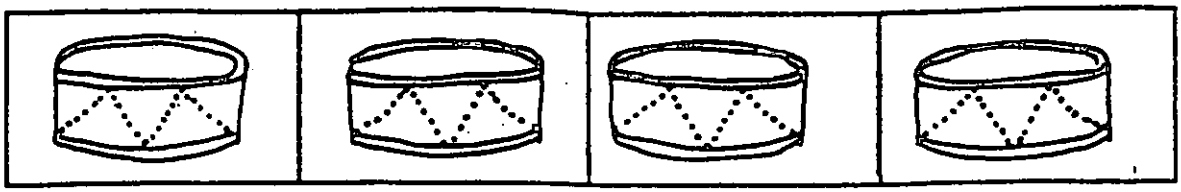
Instructions: "Now I'm going to give you some nonsense words to try to spell."
Note: Dictate the non-words without segmenting them. Allow repetitions, and encourage the child to repeat the non-words aloud. Copy the child's responses onto the front of the Score Sheet.

Non-Words: af, rog, speg, visk, strom, bouse, makidos

Non-word Spelling: Scoring guidelines
Accept reasonable attempts to represent each phoneme in the non-words. There must be some recognition of the diphthong quality of the vowel in *bouse*. Do not penalise voicing errors on the stops or plosives in consonant blends. Do not penalise letter reversals.

Word	Acceptable variations
speg	sbeg
visk	visc, visck, visg
bouse	bous, baws, bows, baus
makidos	mac/mack/mc; y/e/; doss

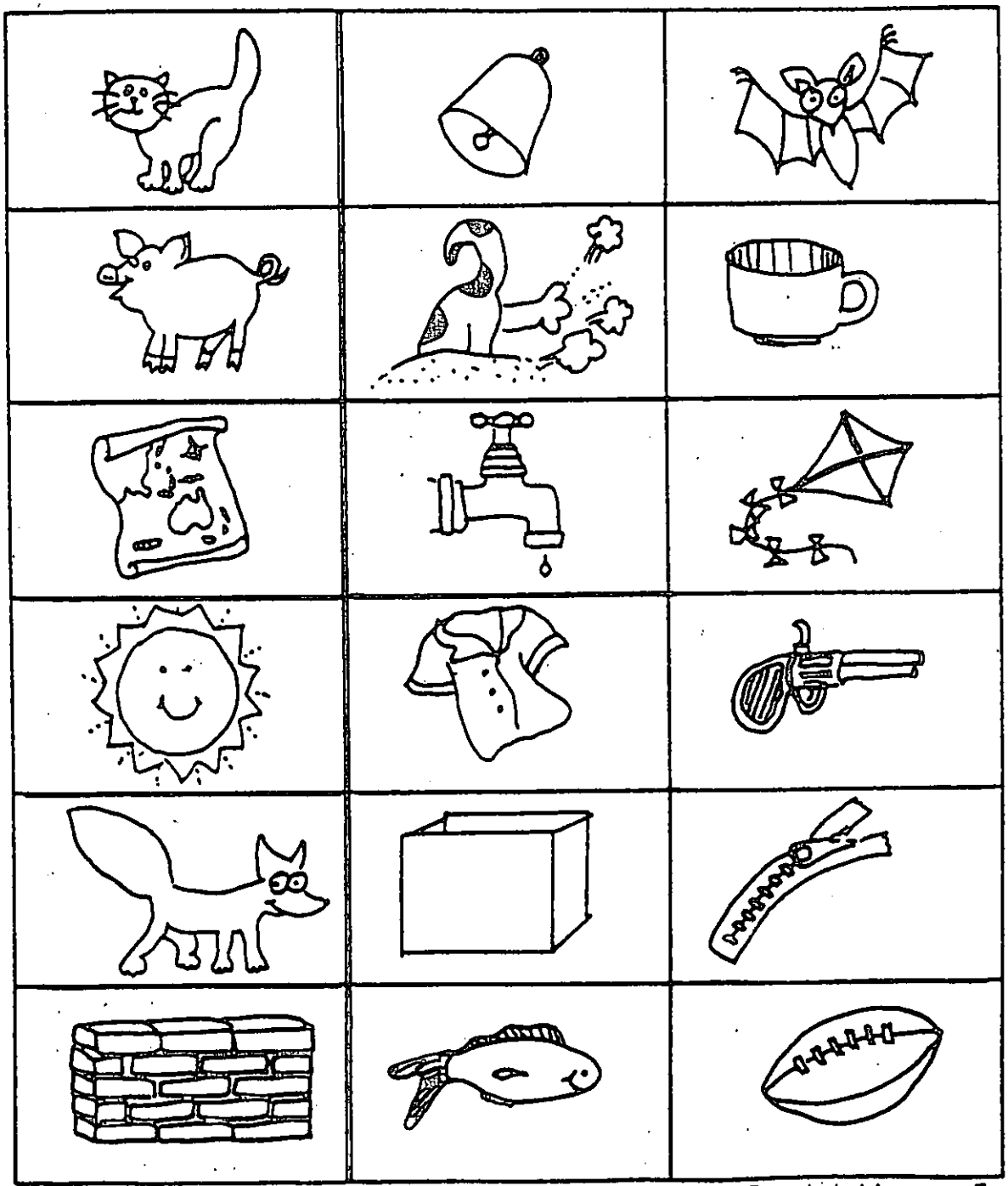
Subtest 1: Syllable Counting



Subtests 8 and 9: Phoneme Segmentation

1	2	3	4

Subtest 2: Rhyme Detection



Subtest 12: Non-word Reading

ig

taf

spob

mesk

scrad

fouse

ripadal

SUTHERLAND PHONOLOGICAL AWARENESS TEST

Name:		Date:
Grade:	Age:	Examiner:

A. SYLLABIC AND SUBSYLLABIC LEVEL

1. Syllable Counting * *Stimulus Page 1* Demo: kangaroo Practice: alligator picnic..... television..... elephant..... supermarket..... /4 P E F + / -	2. Rhyme Detection * *Stimulus Page 1* Demo: cat, bell, bat Practice: pig, dig,cup map, tap, kite..... sun, shirt, gun..... fox, box, zip..... wall, fish, ball..... /4 P E F + / -	3. Rhyme Production Demo: can, fan...man Practice: cat, fat, ... night, fight,..... toe, show,..... bed, red,..... four, sore,..... /4 P E F + / -	4. Identification of Onset Demo: ball Practice: sun fat..... moon..... torch..... girl..... /4 P E F + / -

B. PHONEMIC LEVEL (CVC)

5. Identification of Final Phoneme Demo: game Practice: boot bus..... cap..... roof..... duck..... /4 P E F + / -	6. Segmentation (1) * Stimulus Page 1 Demo: up Practice: pin am..... go..... seat..... mug..... /4 P E F + / -	7. Blending (vc, cv, cvc) Demo: i, ce Practice: m, oo, n s, ee..... d, ay..... r, oa, d..... g, a, te..... /4 P E F + / -	8. Deletion of Initial Phoneme Demo: boat (-b) Practice: meat (-m) tame (-t)..... shout (-sh)..... bark (-b)..... mat (-m)..... /4 P E F + / -

C. PHONEMIC LEVEL (BLENDS)

9. Segmentation (2) * *Stimulus Page 1* Demo: sleep Practice: snake trip..... spoon..... beast..... bond..... /4 P E F + / -	10. cc blends: Delete 1ST Phoneme Demo: play (-p) Practice: clap (-c) smile (-s)..... gruff (-g)..... plate (-p)..... swing (-s)..... /4 P E F + / -	11. cc blends: Delete 2ND Phoneme Demo: brake (-r) Practice: smack (-m) stale (-t)..... plain (-l)..... frog (-r)..... slash (-l)..... /4 P E F + / -	Scoring: P: Pass = 3 or 4 correct E: Emergent = 1 or 2 correct F: Fail = 0 correct +/- Refer to Table 1: Skills Analysis Subtotal: / 44

D. GRAPHEME-PHONEME CORRESPONDENCES

12. Non-word Reading * *Stimulus Page 2* Write in child's response. Score 1 or 0.	13. Non-word Spelling Dictate words. Use spare sheet of paper. Score 1 or 0.
ig	af .....
taf	rog .....
spob	speg .....
mesk	visk .....
scrad	strom .....
fouse	bouse .....
ripadal ..... / 7	makidos ..... / 7 (1: phonetically acceptable 0: unacceptable)

Total score (Maximum = 58)
(Refer to Figure 1: SPAT Total Scores)

Conclusions:

ANNEXURE C

SESOTHO PHONOLOGICAL AWARENESS TEST (SEPAT) GRADE 1-3
TSHENODISEHO KA FONOLOJI: SESOTHO GRADE 1-3

Ditaelo: Tsamaiso

Tataiso e bontshang ho tlohela: Bontsha Karolo ya A ka botlalo. Tlohela teko ka mora hoba o hlolehe dintlheng tse nne tsa dikarolwana tse pedi tsa teko tse ding le tse ding tse ho Karolo ya B le C. Karolo ya D e ka arajwa ha feela ho hlakile hore moithuti a ke ke a kgona ho qeta hó araba mosebetsi ona.

1. Ho bala dinoko:
   Poma mantswe dikotwanwa/dinoko
   Mohlala: pho/o/fo/lo (4) *Itlhakise:* pe/re (2)

1. mosadi (3) 2. ngaka (2) 3. jaeja (3) 4. mokotleng (4)

2. Ho qolla " raeme":
   Ke tlo bitsa mantswe a 3. Bolela hore na a a "raema" kapa tjhe.
   Mohlala: katse/ motse/ pereng *Itlhakise:* mosadi/ fariki/ kariki

1. mmapa/monna/papa
2. letsatsi/kopi/patsi
3. mopheme/kgaba/jeme
4. lebote/hlapi/sefate

3. Ke lentswe lefe le "raemang" le leo ke le bitsang?
   Mohlala: patsi – pitsi *Itlhakise:* hapa, poho

1. Mphe lentswe le 'raemang' le *mofuta* .....
2. Mphe lentswe le 'raemang' le *mokotla* .....
3. Mphe lentswe le 'raemang' le *motse* .....
4. Mphe lentswe le 'raemang' le *kelello* .....

4. Ho bontsha modumo o ka pele:
   Arohanya modumo o ka pele lentsweng ho medumo e meng. Tjena: fa: f/a
   Mohlala: pola (p) *Itlhakise: (s)etulo, (t)afole*

1. kwae (k)
2. ho (h)
3. kga (kg)
4. nyala (ny)

5. Pontsho ya modumo wa ho qetela:
   Modumo wa ho qetela hara lentswe leo o le utlwang ke ofe?
   Mohlala: setsing (ng) *Itlhakise: hapa (a)*

1. ntate (e)
2. ausi (i)
3. mokotla (a)
4. pududu (u)

6. Karohanyo 1:
   Bala medumo hara mantswe a latelang. Suthisa boloko dipakeng tsa modumo o mong le o mong.
   Mohlala: baki – b/a/k/i (4) *Itlhakise: mong - m/o/ng (3)*

1. sh/w/a (3)
2. u/tl/w/a (4)
3. hl/o/l/a (4)
4. j/a (2)

Tshenodiseho ka Fonoloji: Sesotho Gr 1-3
Kobus Gildenhuys 2004

7. Dithopedi:
Ke tlo bitsa lentswe ka dikarolo kapa dinoko. Leka ho bolela lentswe leo.
Mohlala: p/a/t/a – pata *Itlhakise: t/a/m/a/t/i – tamati*

1. ph/-o/-o/-fo/-lo (phoofolo)
2. h/-a/-u/-f/-i (haufi)
3. s/-e/-tjh/-a/-b/-a (setjhaba)
4. kg/-w/-a/-s/-a (kgwasa)

8. Tlohelo ya modumo o qalang:
Ntsha modumo o ka pele lentsweng le leng le le leng mme bolela lentswe le setseng.
Mohlala: kamore (k) – amore *Itlhakise: sotha (s) – otha*

1. hata (ata)
2. bela (ela)
3. tala (ala)
4. sotla (otla)

9. Karolano ya medumo 2:
Bala medumo ya mantswe a latelang. Suthisa boloko mabapi le modumo o mong le o mong
Mohlala: b/u/k/a (4) *Itlhakise: m/m/e (3)*

1 tswa (ts/w/a (3)
2. kgomo (kg/o/m/o) (4)
3. kga (kg/a) (2)
4. hlapi (hl/a/p/i) (4)

10. Tlohelo ya modumo o qalang:
Ntsha modumo o ka pele lentsweng le leng le le leng mme bolela lentswe le setseng.
Mohlala: (k)atse *Itlhakise: (n)tate*

1. /ng/aka
2. /s/eka
3. th/ala
4. /b/ola

11. Ho ntsha sedumanotshi se mahareng:
Ntsha sedumanotshi se mahareng o kenye se seng.
Mohlala: nk(u) - a *Itlhakise: mph(a) – o*

1. pota (a) pata
2. ruta (a) rata
3. loka (e) leka
4. benya (o) bonya

12. Padiso ya ao e seng mantswe:
Ditaelo: "Mantswe a leqepheng lena ha se mantswe a nnete; ke maiketsetso mme ha o eso ka wa a bona. Leka ho a bala."

mifota
sofera
monyomo
resekga
matotora
ketjhako
sepheno

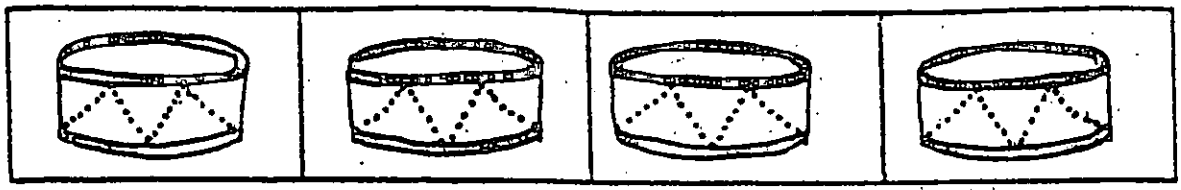
13. Mopeleto wa ao e seng mantswe:
Ditaelo: " Jwale ke tlo bolela mantswe a maiketsetso. Leka ho a peleta."

kgota, hlesatjho, mtusha, phephetja, fita, pesta, tlhakgela

TSHENODISEHO KA FONOLOJI: SESOTHO

STIMULUS LEQHEPE 1

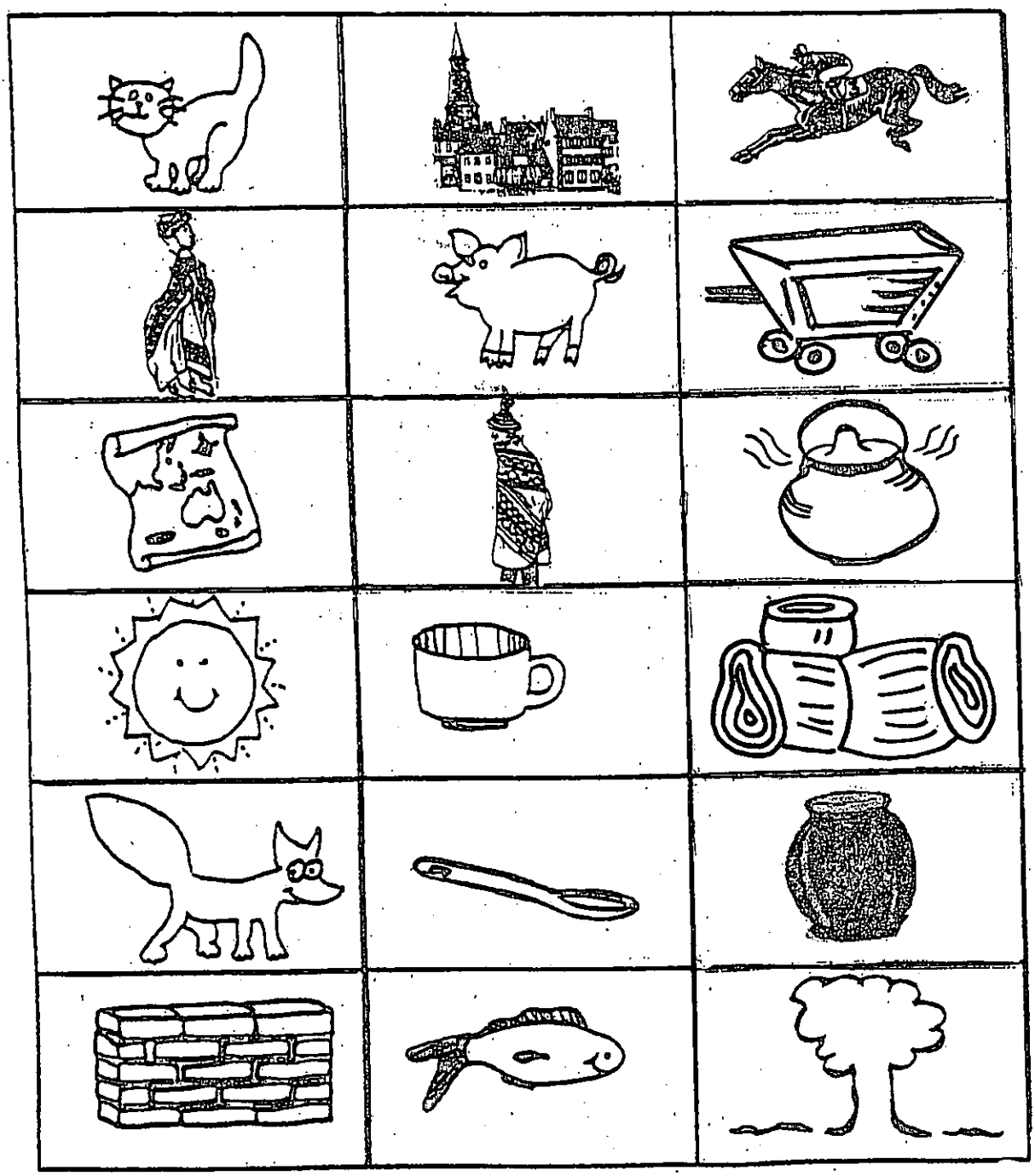
1. HO BALA DINOKO



6 & 9 KAROHANYO (1) & KAROLANO YA MEDUMO (2)

1	2	3	4

2. HO QOLLA 'RAEME'



mifota

sofera

monyomo

resekga

matotora

ketjhako

sepheno

Lebitso:.....Letsatsi: .....
Mohlahlobi: .....

A. SYLLABIC AND SUBSYLLABIC LEVEL

1. HO BALA DINOKO *Stimulus leqhepe 1 Mohlala: pho/o/fo/lo (4) Itlhakise: pe/re (2) mo/sa/dl (3) ng/aka (2) ja/e/ja (3) mo/ko/tle/ng (4) /4 P E F +/-	2. HO QOLLA "RAEME" *Stimulus leqhepe 1 Mohlala: katse/motse/pereng Itlhakise: mosadi/fariki/kariki mmapa/monna/papa letsatsi/kopi/patsi mopheme/kgaba/jeme lebote/hlapi/sefate /4 P E F +/-	3. HO FANA KA LENTSWE LE RAEMANG Mohlala: patsi-pitsi Itlhakise: hapa, poho mofuta ..... mokotla ..... motse ..... kelello ..... /4 P E F +/-	4. HO BONTSHA MODUMO O KA PELE Mohlala: pola (p) Itlhakise: (s)etulo, (t)afole kwae (k) ho (h) kga (kg) nyala (ny) /4 P E F +/-

B. PHONEMIC LEVEL

5. PONTSHO YA MODUMO WA HO QETELA Mohlala: setsi(ng) Itlhakise: hap(a) ntate (e) ausi ... (i) mokotla (a) pududu (u) /4 P E F +/-	6. KAROHANYO (1) *Stimulus leqhepe 1 Mohlala: b/a/k/i (4) Itlhakise: m/o/ng/ (3) sh/w/a (3) u/tl/w/a (4) hl/o/l/a (4) j/a (2) /4 P E F +/-	7. DITHOPEDI Mohlala:p,a,t,a Itlhlakise: t,a,m,a,t,i ph,o,o,fo,lo h,a,u,f,i s,e,tjh,a,b,a kg,w,a,s,a /4 P E F +/-	8. TLOHELO YA MODUMO O QALANG Mohlala:kamore (k) Itlhlakise: sotha (s) hata (h) bela (b) tala (t) sotla (s) /4 P E F +/-

C. PHONEMIC LEVEL (BLENDS)

9. KAROLANO YA MEDUMO (2) *Stimulus leqhepe 1 Mohlala: b/u/k/a (4) Itlhakise: m/m/e (3) ts/w/a (3) kg/o/m/o (4) kg/a (2) hl/a/p/i (4) /4 P E F +/-	10. TLOHELO YA MODUMO O QALANG Mohlala: (k)atse Itlhakise: (n)tate ngaka (ng) seka (s) thala (th) bola (b) /4 P E F +/-	11. HO NTSHA SEDUMANOTSHI SE MAHARENG Mohlala: nku (a) Itlhakise: mpha (o) pota (a) ruta (a) loka (e) benya (o) /4 P E F +/-	Scoring: P: Pass = 3 or 4 correct E: Emergent =1 or 2 correct F: Fail = 0 correct +/- Refer to Table 1 Skills Analysis Subtotal: /44

D: GRAPHEME-PHONEME CORRESPONDENCES

12. PADISO YA AO E SENG MANTSWE mifota sofera monyomo resekga matotora ketjhako sepheno /7	13. MOPELETO WA AO E SENG MANTSWE kgota hlesatjho mtusha phephetja fita pesta tlhakgela /7 1: *phonemically acceptable* 0: phonemically unacceptable

TOTAL SCORE (MAXIMUM = 58)
(Refer to Figure 1: SPAT Total Scores)
Conclusions:

Tshenodiseho ka Fonoloji: Sesotho Gr 1-3
Kobus Gildenhuys 2004

ANNEXURE D SENTENCE SEGMENTATION TEST (SST)

SENTENCE SEGMENTATION TEST (2003)

SESOTHO

Tlhatlhobo e kgethang barutwana ba tla hlahlojwa

Bala palo ya mantswe polelong

Mohlala: Penta lebota lena (3)

1. Ha ke batle mosebetsi o thata (6)

2. Dikgomo tsa rona di lesakeng (5)

3. Ke mamela ka ditsebe tsa ka (6)

ENGLISH

Count the number of words in the sentence

Practice: The man walks down the street. (6)

1. The black cat sits on the mat. (7)

2. Where is the lady in the red jacket? (8)

3. Come to my office. (4)

ANNEXURE E

1. INTRODUCTION

1.1 BACKGROUND

Over a period of a number of years, the Child Guidance Clinics in the Free State Region have made use of the UCT Spelling and Reading tests. These tests were compiled a number of years ago (before the introduction of television to South Africa) and subsequently the syllabi have changed extensively. The reliability and validity of these tests are therefore questionable.

The subject committee for remedial education in the Free State received requests from the child guidance clinics in the region to compile and standardize new reading and spelling tests as the utility value of the existing tests was inadequate. Dr. Khoali, the head of the Department of Education and Culture, of the Free State Provincial Government, granted permission for the compilation and standardization of such tests. These tests were compiled to ensure:

a) administration from grade 1 to, and including, grade 7;
b) utilization for the "new" school population;
c) availability of norms for each term;
d) quick administration and
e) diagnostic value.

1.2 RATIONALE

The rationale for these tests is based upon the assumption that pupils' ability to read and write correctly is a valid criterion for their achievement levels in school subjects and more specifically in language subjects. A further assumption is that pupils who experience reading or spelling problems at school, also tend to experience learning problems which impede their subsequent achievement and scholastic progress.

These tests are an attempt at providing objective, reliable and valid measuring instruments for both English and Afrikaans.

1.3 TEST MATERIAL

The test material consists of:

(i) test booklet - English/Afrikaans

(ii) manual - English/Afrikaans

(iii) answer sheets: Each grade has its own spelling and reading sheets, namely:

English:	Grade 1:	Spelling (S1) and Reading (R1)
	Grade 2:	Spelling (S2) and Reading (R2)
	Grade 3:	Spelling (S3) and Reading (R3)
	Grade 4:	Spelling (S4) and Reading (R4)
	Grade 5:	Spelling (S5) and Reading (R5)
	Grade 6:	Spelling (S6) and Reading (R6)
	Grade 7:	Spelling (S7) and Reading (R7)

Note that the code in brackets indicates whether it is a spelling (S) or reading (R) test. The value directly after the code is indicative of the specific grade level at which the pupil is to be tested. In other words, (S1) implies that it is the spelling words for grade 1 which are to be tested. Codes are used to disguise the grade levels of the words being administered to the pupil.

2. TEST INSTRUCTIONS

2.1 SCREENING TEST

The aim of the screening tests is to determine the appropriate ***word list grade*** for a given pupil.

To determine which grade's word list should be used, the words are administered starting from the easiest (grade 1 words). To conceal the grade of the words being administered letter symbols have been used. The 5 words depicted by the letter A, refer to the grade 1 words, etc. At each administration, all 5 words of a specific grade are read or spelt. If a pupil should have 4 or more correct responses, the following grades' words are administered until he/she obtains 3 out of 5 (in other words 60%) for a specific combination of words. At this stage the test is terminated and the word list of that specific grade may be used for the comprehensive testing of the pupil. If a pupil should, for example, obtain 4 out of 5 for the grade 3 spelling words, but only obtain 2 out of 5 for the spelling words of grade 4, it is recommended that the word list of grade 3 is used to do the more comprehensive testing. Occasionally homophones appears in the spelling words in which case both spellings must be accepted as correct responses.

The following English words are applicable:

a)	Grade 2:	*hill heal;*
b)	Grade 3:	*draw drawer;*
		wheel weal;
c)	Grade 4:	*flower flour;*
		carrot carat;
		lettuce letters;
d)	Grade 5:	*weight wait.*

2.2 SPELLING TEST

Allow the pupil to complete the information at the top of the answer sheet for spelling. Say to the pupil: "I want you to write down a few words. Some words are easy but others are more difficult. Don't worry if you can't write them all down. Just do your best."

Allow the pupil to write down the words in the same order as it appears on the spelling list. Pronounce the words clearly without emphasizing any part in an unnatural manner.

2.3 READING TEST

To be an effective reader, a pupil must be able to recognize a word quickly (automatically) - this is known as the sight word vocabulary of a pupil. A reading test therefore aims at determining this sight word vocabulary of the pupil. If he/she uses syllables/sounds to recognize the word, this word is not part of his/her sight word vocabulary. The pupil is expected to read one word per second without using any analysis techniques.

Open the test booklet at the appropriate word list. Place this list in front of the pupil, using a loose sheet of paper to ensure that only one word is visible at a time. Say to the pupil, "I want you to read a few words to me. Some words are easy, but others are more difficult. Don't worry if you can't read them all. Just do your best." Allow the pupil to read the words one-by-one while he/she moves the loose sheet of paper downwards.

The reading words have been printed on the reverse side of the answer sheet for the spelling words of the corresponding grade. While the testee is reading, the tester may thus indicate (on this page) whether or not the word has been correctly read. If the word should be incorrectly read, the error may be indicated e.g. omissions, additions, sounding, etc. under "remarks".

2.4 PROCEDURE AND DISCONTINUATION RULES

If the pupil is unable to read or spell the first three words of the grade in which he/she is, allow him/her to read and/or spell the words of the previous grade and compare his/her raw score to the table of norms of that specific grade.

Concerning the English tests, the following discontinuation rules can be applied:

Grade 1 **spelling and reading test**	-	discontinue after 6 **consecutive** failures
Grade 2 to grade 7 **spelling test**	-	discontinue after 7 **consecutive** failures
Grade 2 to grade 7 **reading test**	-	discontinue after 6 **consecutive** failures

The discontinuation rules were determined by investigating the performance of the norm group in the reading and spelling tests during the first term of 1996. The percentage of pupils who, after a specific number of consecutive failures, read or spelt words correctly, was determined. In this way it was found that for the grade 2 to grade 7 spelling tests (after 7 consecutive failures) the percentages varied between 3,57% and 8,54% and for the reading tests (after 6 consecutive failures) varied between 4,54% and 9,22%. For the grade 1 spelling and reading test the percentages were respectively 2,09% and 3,84% (after 6 consecutive failures). Of these pupils, a large percentage achieved only one more correct response later, which would not necessarily have provided them with a different stanine.

These discontinuation rules can be applied to determine the reading and spelling **levels** of a pupil. The tester may allow as many words to be read and spelt as deemed necessary, should further information be required for a more comprehensive qualitative evaluation.

3. SCORING THE TESTS

After completion of the spelling test, one mark is allocated for a correct response and zero for an incorrect one. All correct responses are summated to determine the individual's raw score for spelling. This procedure is repeated for the reading test. This raw score is then converted into a stanine by using the appropriate norm table and may be filled in at the bottom of the reading answer sheet for future reference.

Note that the spelling tests for the following grades contain words which have more than one correct spelling (homophones) namely:

a) Grade 2: bread / bred

b) Grade 3: rain / reign / rein;
wheel / weal

c) Grade 4: shoe / shoo

d) Grade 7: peace / piece;
through / threw;
rhyme / rime

Any of these spellings may be accepted as correct.

4. INTERPRETATION OF TEST RESULT

4.1 QUANTITATIVE INTERPRETATION

4.1.1 Norms

Norms for the spelling and reading tests have been calculated in the form of stanines and percentile ranks. Due to the fact that the norms had to be available for each term, the same testees were tested during the first and last terms of 1996. The grade 1 pupils were, however, tested for the first time in the third term.

(i) Stanines

The stanine scale is a normalized nine point standard scale. It produces standard scores which range from 1 to 9 with a mean of 5 and a standard deviation of 1,96. Each stanine value represents a specific percentage of cases as reflected in Table 4.1.

Table 4.1: Percentile range and description of stanine scale

Percentage testees	Stanine	Cumulative percentage	Description	Estimated % of testees
Lowest 4,01%	1	4,01%	Very poor	4%
Next 6,55%	2	10,56%	Poor	19%
Next 12,1%	3	22,66%		
Next 17,47%	4	40,13%	Average	54%
Middle 19,74%	5	59,87%		
Next 17,47%	6	77,34%		
Next 12,1%	7	89,44%	Good	19%
Next 6,55%	8	95,99%		
Highest 4,01%	9	100%	Very good	4%

Stanines may be grouped together to obtain a five-point scale in descriptive terms as indicated on the right hand side of the table. This scale may be employed to verbally describe the testees' score.

(ii) **Percentile ranks**

The percentile rank scale produces a more accurate description of the testee's mark than the nine point stanine scale. The percentile rank of a specific test score is equal to the percentage of testees in the norm group who obtained a score equal to or lower than that specific score.

With reference to Table 4.1, we may deduce that if a pupil's raw score is converted into a stanine of 7, that 77,34% of the norm group obtained a lower score and 10,56% obtained a higher score than that specific pupil. We may further deduce that 89,44% of the norm group obtained a similar or lower score (see Tables 7.1 - 7.14 for a complete list of norm tables).

4.1.2 Interpretation of testee's norm

After the pupil has completed a test and it has been scored according to the guidelines provided in paragraph 3, this raw score must be converted into a standard score (stanine) to facilitate meaningful interpretation. During this conversion process, the following must be borne in mind:

If, during the testing, the word lists of the same grade in which the pupil currently is, are used, then the pupil's raw score must be compared with the raw scores of the **same** term of the grade in which the pupil actually is, to obtain a standard score (stanine). In other words, if a grade 3 pupil is tested during the fourth term by using the grade 3 spelling test and he obtains 8 out of 20, then this raw score of 8 must be compared with the stanines of the fourth term. According to table 7.5 a raw score of 8 on the grade 3 spelling test, administered during the fourth term, corresponds with a stanine of 3. By considering the percentile ranks, the conclusion may be drawn that 23% of the norm group obtained a similar or lower score on the spelling test in the fourth term. This implies that 77% of the norm group obtained a higher score than this pupil.

The norm tables may also be consulted to further analyse this pupil's score on the grade 3 spelling test. In this way one may determine the highest term during which at least 60% (stanine of 5) of the grade 3 pupils' norm group obtained a score of 8 out of 20 on this spelling test. In this example, the highest term during which a raw score of 8 corresponds with a stanine of 5, is during the first term. This implies that although this pupil's score of 8 out of 20 corresponds with a stanine of 3 during the fourth term, the same score corresponds with a stanine of 5 during the first term. The conclusion may now be drawn that although this pupil is in the fourth term of his/her grade 3 year, the standard of his/her spelling ability is at the grade 3 **first term** level. A similar route may be followed to interpret a specific pupil's raw score who has been tested by means of the reading and/or spelling word lists of a lower, or even higher grade.

4.2 QUALITATIVE INTERPRETATION

The words from the ***ESSI* Reading and spelling tests** may be qualitatively analysed. As an indication of how these words may be qualitatively analysed, the grade 1 words are dealt with in the following two tables. The exposition supplied here, are the most outstanding cognitive problems which may lead to reading and spelling problems and are given in table 4.2 and table 4.3 respectively.

Table 4.2: Qualitative analyses of possible errors in the grade 1 reading test

Reading error	Possible problem	Cognitive problem
time/tin *first/fast*	Sound differentiation problems (does not know sounds)	*Visual*: memory, discrimination, sense of direction and form consistency *Auditory*: discrimination and memory
toys/tears	Problems with grapheme - phoneme relation	Problems to convert from *visual* to *auditory* equivalent
kitchen/king	Reads first letter and guesses the rest of the word	*Visual*: memory, analyses and synthesis Problems to convert from *visual* to *auditory* equivalent
knee/keen	Sequence of sounds	*Auditory*: sequence, analyses and synthesis
box/dox	Letter reversals	*Visual*: discrimination and divertionality
box [*b*] [*o*] [*x*]	Sounds the words	*Visual*: memory and imagery

Table 4.3: Qualitative analyses of possible errors in the grade 1 spelling test

Spelling error	Posssible problem	Cognitive problem
ink ingk	Addition of unnecessary letters	*Auditory*: discrimination and analysis *Visual*: analysis; synthesis and imagery
shop sop	Omission of necessary letters	
dish dich *flute floot*	Substitution of letters Phonetic spelling mistakes	*Visual*: memory and imagery
sad das	Reversals	Problems in converting from the *auditory* to the *visual* equivalent *Auditory:* sequence
flag fleg	Substitution of vowels	Problems to converting from auditory to visual equivalent
dish dihs	Reversal of consonants	*Visual*: synthesis and imagery
king kign	Reversal of vowel/consonant	*Auditory:* sequence and discrimination
ripe ribe	Confusion of letter orientation	*Auditory: discrimination* *Visual:* discrimination

5. STANDARDIZATION OF THE TESTS

5.1 IDENTIFICATION OF PRELIMINARY WORDS

The identification of the preliminary words was regarded as one of the most important phases of the investigation. Remedial teachers employed by the Child Guidance Clinics in the Free State (Bethlehem, Bloemfontein, Kroonstad, Sasolburg and Welkom Clinics) were requested to submit 20 spelling and 20 reading words for each grade. From the obtained words, 30 spelling and 30 reading words were selected for each grade (grade 1 to grade 7).

These selected words were presented to specialist remedial educationists after which the experimental word lists were finalized.

ANSWER SHEET: Reading (R3)

Name of Pupil: ..... **Gender (m/f):** .....

Name of School: ..... **Age:** .....

Grade: .....

	Remark
1. blue	
2. uncle	
3. minute	
4. village	
5. library	
6. listen	
7. caught	
8. straight	
9. sausage	
10. enough	
11. kidney	
12. garage	
13. guess	
14. ocean	
15. wrench	
16. nuisance	
17. lounge	
18. unusual	
19. choruses	
20. scarcely	

	Raw score	Stanine
Spelling:	/20	
Reading:	/20	

LEES- EN SPELTOETSE
READING AND SPELLING TESTS

ANSWER SHEET: Spelling (S3)

Name of Pupil: ..... **Gender (m/f):** .....

Name of School: ..... **Age:** .....

Grade: .....

	Remark
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	

ANNEXURE F

1.1 BACKGROUND

Resent research emphasizes the need for a standardized reading and spelling test in Sesotho. A letter dated 1997-12-04 from the Director: Special Needs of the Free State Department of Education stated that 68% of learners in grade 1 to grade 3 are Sesotho speaking. They requested the compilation and standardization of a Sesotho reading and spelling test for grade 1,2 and 3 learners, similar to the ESSI reading and spelling test.

The Head of the Department of Education and Culture of the Free State Provincial Government, granted permission for the compilation and standardization of such tests. The development of this test was an attempt to provide a valid, reliable and objective measuring instrument in Sesotho in order to:

- Determine the reading and spelling abilities of Sesotho speaking learners in grade 1-3;
- Make norms available for each term and for each grade;
- Enable easy, quick administration during the entire year;
- Diagnose reading and spelling problems more specifically.

1.2 RATIONALE

The rationale for the Sesotho reading and spelling test is based upon the fact that learners who experience reading or spelling problems at school also tend to experience problems which impede their subsequent achievement and scholastic progress. A further assumption is that learners' ability to read and write correctly is a valid criterion for their achievement levels in school subjects.

1.3 TEST MATERIAL

The test material consists of:

- A manual with the reading and spelling tests of grade 1 to 3;
- Answer sheets for each grade.

Grade 1: Spelling (S1) and Reading (R1)
Grade 2: Spelling (S2) and Reading (R2)
Grade 3: Spelling (S3) and Reading (R3)

2. TEST INSTRUCTIONS

2.1 THE SPELLING TEST

The learner's biographical information should be completed on the answer sheet. The following instructions are given to the learner: "I want you to write down a few words. Some words are easy but others are more difficult. Don't worry if you can't write them all down. Just do your best."

Allow the learner to write down the words in the same order as they appear on the spelling list. Pronounce the words clearly without emphasizing any part in an unnatural manner.

2.2 THE READING TEST

The aim of the reading test is to determine the sight word vocabulary of the learner. The learner is expected to read one word per second without using any analysis techniques. The reading word list is placed in front of the learner using a loose sheet of paper to ensure that only one word is visible at a time. Say to the learner: "I want you to read a few words to me. Some words are easy, but others are more difficult. Don't worry if you can't read them all. Just do your

best." The learner is allowed to read the words one by one while he/she moves the loose sheet of paper downwards.

The reading words have been printed on the reverse side of the answer sheet for the spelling words of the corresponding grade. While the testee is reading, the tester may indicate whether the word has been correctly read and at the same time indicate the errors, e.g. omissions, additions, sounding.

3. SCORING THE TESTS

One mark is allocated for a correct response and zero for an incorrect one. All the correct responses are summated to determine the individual's raw score for spelling and reading. This raw score is then converted into a stanine by using the appropriate norm table and may be filled in at the bottom of the answer sheet.

4. INTERPRETATION OF THE TEST RESULTS

4.1 NORMS

Norms for the spelling and reading tests have been calculated in the form of stanines and percentile ranks. The same learners were tested during the first and last terms of 2000 in order to develop norms for each term. The grade 1 learners were tested in the third term and fourth term.

4.1.1 Stanines

The stanine scale is a normalized nine point standard scale. It produces standard scores, which range from 1 to 9 with a mean of 5 and a standard deviation of 1,96. Each stanine value represents a specific percentage of cases reflected in Table 4.1.

Table 4.1: Percentile ranks and description of stanine scales

Percentage testees	Stanine	Cumulative percentage	Description	Estimated % of testees
Lowest 4,01%	1	4,01%	Very poor	4%
Next 6,55%	2	10,56%	Poor	19%
Next 12,1%	3	22,66%		
Next 17,47%	4	40,13%	Average	54%
Next 19,74%	5	59,87%		
Next 17,47%	6	77,34%		
Next 12,1%	7	89,44%	Good	19%
Next 17,47%	8	95,99%		
Highest 4,01%	9	100,00%	Very good	4%

4.1.2 Percentile ranks

The percentile rank scale produces a more accurate description of the testee's mark than the nine point stanine scale. The percentile rank of a specific test score is equal to the percentage of testees in the norm group who obtained a score equal to or lower than that specific score.

With reference to Table 4.1, we may deduce that if a learner's raw score is converted into a stanine of 7, that 77,34% of the norm group obtained a lower score and 10,56% obtained a higher score than that specific learner. We may further deduce that 89,44% of the norm group obtained a similar or lower score (see Tables 7.1 – 7.6 for a complete list of norm tables).

4.2 INTERPRETATION OF THE TESTEE'S RAW SCORE

After the learner has completed a test and it has been scored according to the guidelines provided in paragraph 3, this raw score must be converted into a standard score (stanine) to facilitate meaningful interpretation. During this conversion process the following must be borne in mind:

If, during the testing, the word lists of the same grade in which the learner currently is, are used, then the learner's raw score must be compared with the raw scores of the same term of the grade in which the learner actually is, to obtain a standard score (stanine). In other words, if a grade 3 learner is tested during the fourth term by using the grade 3 spelling test and he obtains 7 out of 20, then this raw score of 7 must be compared with the stanines of the fourth term. According to table 7.5 a raw score of 7 on the grade 3 spelling test, administered during the fourth term, corresponds with a stanine of 3. By considering the percentile ranks, the conclusion may be drawn that 23% of the norm group obtained a similar or lower score on the spelling test in the fourth term. This implies that 77% of the norm group obtained a higher score than this learner.

4.3 QUALITATIVE INTERPRETATION

The errors in the Sesotho spelling and reading test may be qualitatively analysed. As an indication of how these words may be qualitatively analysed, the grade 1 words are dealt with in the following two tables. The expositions supplied here, are the most outstanding cognitive problems, which may lead to spelling and reading problems and are given in Table 4.2 and 4.3 respectively.

Table 4.2: Qualitative analyses of possible errors in the grade 1 spelling test

Spelling errors	Possible problem	Cognitive problem
bula for **d**ula (open for sit)	Letter reversals	Visual: Discrimination, divertionality, imagery and memory Auditory: Problems to distinguish between sounds
lelele**le** for lelele (long)	Addition of unnecessary letters	Visual: Analysis, synthesis and imagery
letam**a** for letam**o** (dam)	Substitution of vowels	Problems to convert from auditory to visual equivalent
kol**o** for kol**oi** (car)	Omission of letters	Auditory: Discrimination and analysis Visual: Analysis, synthesis and imagery

Table 4.3: Qualitative analyses of possible errors in the grade 1 reading test

Reading error	Possible problem	Cognitive problem
bapala for bala (play for read)	Addition of unnecessary letters	Visual: Analysis, synthesis and imagery Auditory: Discrimination and analysis
bitsa for pitsa (call for pot)	Substitution of consonants / confusion of letter orientation	Visual: Discrimination, memory and imagery Problems in changing visual symbols to auditory equivalents
Struggles to read a word, for example **aubuti** (brother)	Problem with syllables	Visual: Analysis

5. STANDARDIZATION OF THE TESTS

5.1 IDENTIFICATION OF PRELIMINARY WORDS

The identification of the preliminary words was regarded as an important phase of the investigation. In May 1999 the Psychological Services of the Free State Department of Education were visited in order to explain the research. Following this explanation, meetings with experienced teachers took place. They compiled 7 reading and 7 spelling word lists (20 words for each list). These word lists were administered to 30 learners in each grade (1,2 and 3).

These selected words were presented to Prof. M.A. Moleleki (Head of department of African languages: UFS) for his approval, after which the experimental word lists were finalized.

5.2 ADMINISTRATION FOR ITEM ANALYSES

Ten schools were involved in this phase, of which 6 schools were in Mangaung and 4 in the rural areas. The experimental reading and spelling word lists were administered to the testees during the last term of 1999. Six Sesotho speaking students (2 per grade) administered the reading and spelling tests during the next phases to ensure uniformity in the administration of the tests.

During the selection of the testees, every attempt was made to obtain similar numbers of below average, average and above average achievers as well as boys and girls. The composition of the sample learners is reflected in Table 5.1.

Table 5.1: Composition of the samples to which the Sesotho reading and spelling tests were administered for item analyses

Grade	Test	Boys		Girls		Total	
		N	%	N	%	N	%
One	Spelling	130	44,2	164	55,8	294	50,1
	Reading	129	44,0	164	56,0	293	49,9
Subtotal		259	44,1	328	55,9	587	22,8
Two	Spelling	246	49,2	254	50,8	500	50,2
	Reading	244	49,1	253	50,9	497	49,8
Subtotal		490	49,1	507	50,9	997	38,7
Three	Spelling	264	52,9	235	47,1	499	50,2
	Reading	263	53,1	232	46,9	495	49,8
Subtotal		527	53,0	467	47,0	994	38,5
Total		1276	49,5	1302	50,5	2578	100,0

Table 5.2: Descriptive statistics regarding the ages of the learners according to grades

Grade	Test	Boys			Girls		
		N	8	s	N	8	s
One	Spelling	130	89,07	11,53	164	88,08	12,20
	Reading	129	89,14	11,54	164	88,08	12,20
Two	Spelling	246	103,41	15,26	254	101,24	13,32
	Reading	244	103,51	15,27	253	101,28	13,33
Three	Spelling	264	122,76	19,74	235	119,76	19,02
	Reading	263	122,68	19,74	232	119,85	19,11

From table 5.2 it is apparent that:

- The mean age for boys is slightly higher than that for the girls in all three grades.

The results of the item analyses are contained in a dissertation (Koen, 2000) which is available from the test compilers. The IRT results (Barnard, 1991;

Hambleton, 1987) were primarily utilized during the selection of the items for the final reading and spelling word lists.

5.3 ADMINSTRATION FOR ESTABLISHING NORMS

The final reading and spelling word lists were administered to a representative sample of learners during the first (first administration) as well as the fourth terms (second administration) of 2000. The grade 1 learners were evaluated during the third and fourth terms, as it was not possible to evaluate them earlier. Table 5.3 reflects the composition of the sample according to gender and type of test.

Table 5.3: Composition of the samples to which the reading and spelling tests were administered for establishing norms

Grade	Test	First administration				Second administration			
		Boys		Girls		Boys		Girls	
		N	%	N	%	N	%	N	%
One	Spelling	132	51,1	126	48,9	128	51,6	120	48,4
	Reading	132	51,1	126	48,9	128	51,6	120	48,4
Subtotal		264	51,1	252	48,9	256	51,6	240	48,4
Two	Spelling	94	49,0	98	51,0	87	49,4	89	50,6
	Reading	94	49,0	98	51,0	87	49,2	90	50,8
Subtotal		188	49,0	196	51,0	174	49,3	179	50,7
Three	Spelling	102	46,4	118	53,6	98	47,1	110	52,9
	Reading	102	46,4	118	53,6	98	47,3	109	52,7
Subtotal		204	46,4	236	53,6	196	47,2	219	52,8
Total		656	49,0	684	51,0	626	49,5	638	50,5

According to the above mentioned table a relatively high degree of success was achieved in obtaining the same learners during the first and second administration.

6. TECHNICAL DETAIL

6.1 INTRODUCTION

The statistical data pertaining to the reading and spelling tests are reflected in Table 6.1. This information pertains to the first administration of the final tests for grade 2 and 3 learners during the first term of 2000, and for grade 1 learners during the third term.

Table 6.1: Statistical data for the Sesotho reading and spelling tests

Grade	Test	N	Number of items	$\bar{x}$	s	Reliability KR-20	Skew-Ness	Kur-tosis
One	Spelling	258	15	8,31	4,46	0,929	-0,21	-1,29
	Reading	258	15	7,81	4,60	0,940	0,13	-1,30
Two	Spelling	192	20	10,17	5,50	0,902	-0,20	-0,96
	Reading	192	20	9,37	7,18	0,958	0,13	-1,51
Three	Spelling	220	20	10,55	5,78	0,928	-0,38	-0,91
	Reading	220	20	11,35	7,06	0,953	-0,41	-1,37

6.2 SKEWNESS AND KURTOSIS

Skewness refers to the degree in which the distribution of a group of test scores approaches a normal curve (Esterhuyse, 1997). The values normally vary between –3 and +3. If the value is equal to zero, the distribution of scores is symmetrical about the mean. A positive value implies that the majority of the learners obtained a score lower than the mean and a negative value implies that the majority obtained a score higher than the mean.

With respect to the Sesotho tests, the spelling test for grade 2 as well as the spelling and reading tests of grade 3 reflect relatively small negative coefficients (varying between –0,20 and –0,41). The reading test for grade 2 reflects a relatively small positive coefficient.

Kurtosis refers to the relative flatness or peakedness of the distribution curve. A normal curve will have kurtosis of naught, while a positive kurtosis value will pertain to a more peaked curve (Esterhuyse, 1997). A negative kurtosis value implies that the distribution will be flatter than the normal curve. The Sesotho reading and spelling tests reflect a negative kurtosis value.

6.3 RELIABILITY

6.3.1 Kuder-Richardson-formula-20

The Kuder-Richardson-20-reliability coefficient (KR-20) was calculated for the different reading and spelling tests (Huysamen, 1996). Table 6.1 indicates the reliability of the tests. The coefficients are higher than 0,85, implying that the internal consistency of these tests may be accepted with a large degree of certainty.

6.3.2 Retest reliability

Retest reliability is determined when the same test (items) is administered to the same group of testees, representative of the population for which the test was designed, on two different occasions and the correlation between these two sets of scores is calculated (Huysamen, 1996). In this study the reading and spelling scores which the learners obtained during the first term of 2000 were correlated with their reading and spelling scores of the fourth term. This information appears in Table 6.2

Table 6.2: Correlation coefficients for the Sesotho reading and spelling tests as calculated between the first and second administrations

Grade	N	First administration	Second administration	
			Spelling	Reading
One	248	Spelling	0,858*	
	248	Reading		0,865*
Two	176	Spelling	0,795*	
	176	Reading		0,796*
Three	208	Spelling	0,893*	
	208	Reading		0,907*

*$p \leq 0,001$

All calculated correlation coefficients are significant at the 0,01% level.

6.4 VALIDITY

6.4.1 Content validity

To ensure content validity, experienced teachers were involved in the identification of the words. They were to identify the words on grounds of their knowledge of the different grade syllabi. These words included in the preliminary word lists were submitted to Prof. M.A. Moleleki (Head of the Department of African languages: UFS) for his approval.

6.4.2 Predictive validity

The predictive validity of the Sesotho tests were investigated by correlating the learners' reading and spelling scores, obtained during the first term of 2000, with their fourth term examination marks for their Sesotho language ability.

Table 6.3: Correlation coefficients for learners' reading and spelling scores and their examination marks for Sesotho language ability

Grade	Type of test	Sesotho examination mark
One	Spelling	O,717*
	Reading	0,673*
Two	Spelling	0,627*
	Reading	0,520*
Three	Spelling	0,720*
	Reading	0,693*

*p □ 0,001

READING WORDS GRADE 3 (R3)

1. bolo
2. pene
3. pina
4. bapala
5. ditaba
6. mamela
7. nko
8. tsamaya
9. kgomo
10. dilepe
11. leleme
12. lesole
13. bonolo
14. thipa
15. thaba
16. jwale
17. bophelo
18. sotho
19. putswa
20. sheba

ANNEXURE G

PO Box 72,
Jamberoo, NSW 2533
Australia.

ABN: 36 406 367 493
Phone: (02) 4261 2755 (w)
(02) 4236 0402 (h)
Email: rneilson@ozemail.com.au

1 June, 2001

Catherine Hattingh
Free State University
Bloemfontein
South Africa 9301.

Dear Catherine,

Enclosed is a complimentary copy of the Sutherland Phonological Awareness Test – I hope it proves useful to you in your research.

The test itself is subject to copyright, but you are free to photocopy the scoresheet for clinical and research purposes. None of the test material may be resold. Additional copies of the test may be purchased from me – I'll let you know what the cost would be when I have found out what the postage costs are.

If you do make adaptations to the test in the form of translations into other languages, I'd appreciate it if you let me know what your plans were so that I could offer feedback (I've had lost of experience with the pitfalls of phonological awareness test design!), and if you acknowledged the test in any publications.

And, most of all, I'm interested in your eventual findings. Please don't forget to keep in touch with me to let me know how your work is going. I'll contact you if I ever get working on my dream of researching Australian Aboriginal communities.

Best wishes,

Roslyn Neilson

Roslyn Neilson
Speech Pathologist

ANNEXURE H Letter of permission from Department of Education

Enquiries : Mrs M.V Wessels/
Reference no. : 16/4/1/11 2004

Tel :(051) 404 8075
Fax :(051) 4048074

2004-03-12

Ms CM Hattingh
11 Neville Holmes Crescent
Heuweisig
BLOEMFONTEIN
9301

Dear Ms Hattingh

REGISTRATION OF RESEARCH PROJECT

1. This letter is in reply to your application for the registration of your research project.

2. Research topic: **Phonological awareness in Sesotho learners: Language specific differences that may affect the acquisition of early reading skills.**

3. Your research project has been registered and you may conduct research in the Free State Department of Education under the following conditions:

   3.1 The learners participate voluntarily in the project.
   3.2 The names of the schools, the principals and the learners involved remain confidential
   3.3 The letter of permission is shown to all participating persons.
   3.4 This letter is shown to all participating persons.

4. You are requested to donate a report on this study to the Free State Department of Education. It will be placed in the Education Library, Bloemfontein. When you bring this copy it will be appreciated if you would also bring a summary of the report on a computer disc, so that it may be placed on the website of the Department.

5. Once your project is complete, we should appreciate it if you would present your findings to the relevant persons in the FS Department of Education. This will increase the possibility of implementing your findings wherever possible.

6. Would you please write a letter **accepting the above conditions**? Address this letter to:

   The Head: Education, for attention: CES: IRRISS
   Room 1204, Provincial Government Building
   Private Bag X20565, BLOEMFONTEIN, 9301

7. We wish you every success with your research.

Yours sincerely

JS Tladi
Chief Director: Strategic Management Services

cc Director of District: Motheo

Article 1

The development of phonological awareness in a first language and in English as a second language during the early literacy phase

Summary

In order to examine the development of phonological awareness skills in a first and in a second language, it is important first to focus on the significance of early reading skills (such as phonological awareness skills) and how these support beginner reading. Early reading skills in alphabetic languages include the knowledge that printed words carry messages, that words have an internal sound structure (phonological awareness) and that symbols more or less represent sounds in words. The development of phonological awareness skills as well as direct instruction in letter-sound correspondences therefore help to acquire crucial early reading skills such as sight-word reading. Converging research findings indicate that phonological awareness is regarded as the single most important factor predicting reading ability as well as reading disability during the early literacy phase.

Phonological awareness is part of larger construct known as phonological processing. Research results indicate that phonological processing represents two dimensions, namely coding and awareness. Phonological coding processes include phonetic and phonological re-coding in short- and long-term memory. Awareness refers to an oral phonological processing ability and indicates an awareness of all sizes of sound units in a language. Phonological awareness skills refer to the ability to perform a variety of graded tasks, such as segmenting, blending, identifying and manipulating sound units in words. Implicit awareness of sounds in a language develops spontaneously as part of normal language development. As a child acquires more words (vocabulary) explicit awareness of sound units develop at the level of the word, syllable and the onset-rime. The most sophisticated level of phonological awareness will be awareness of

individual phonemes in words and the ability to manipulate them in words. Explicit phoneme awareness will only be present once reading instruction starts. The developmental sequence of phonological awareness skills in languages representing transparent orthographies (e.g. Southern Sotho) follow the language-universal pattern, i.e. development at word, syllable, onset-rime and phoneme levels, but may be easier due to the direct sound-symbol relationship that exists between phonemes and their corresponding symbols. The greatest challenge for African learners, however, will be the written representation of words due to the disjunctive (Nguni languages) or conjunctive way (Sotho languages) in which words are represented in these languages. The way that words are represented in African languages cause problems to identify word boundaries in African languages. Southern Sotho beginner readers therefore need to develop early reading skills that will support not only reading but also spelling and writing skills in their L1. Well-developed linguistic skills in the l1 transfer as metalinguistic skills to support the acquisition of similar skills in a L2. The development of phonological awareness skills in English as L1 may be more difficult due to the many irregular sound-symbol correspondences that exist in words in English. Segmentation and manipulation skills are the best predictors of early reading ability in English. The development of phonological awareness skills in English as a second language will show similarities but also significant differences to the development of phonological awareness skills in Southern Sotho as L1. Language-specific differences (phonological, morphological and orthographic) that exist between languages significantly influence the development of reading skills in a L2, in particular, if the two languages display no similarities. ESL learners may subsequently develop phonological awareness skills at a different rate, in a different order as well as achieving different levels of phonological awareness when transferring to English as L2. Additional factors such as oral proficiency, vocabulary and background knowledge also contribute to the problems that ESL learners experience to becoming literate in English as L2.

It is therefore recommended that literacy instruction should initially focus on L1 reading skills because of its positive impact on the development of second language reading skills. Learners should develop a wide range of phonological awareness skills through oral language activities to reach the crucial stage of 'reading readiness' in order to start their reading instruction in English.

Article 2
Phonological awareness in Southern Sotho learners: Language-specific differences affecting the acquisition of early reading skills in English as L2.

Summary

Research studies investigating the universal and language-specific characteristics of literacy development found that phonological awareness skills make a significant contribution to the acquisition of early literacy skills in languages with transparent, as well as in languages with opaque orthographies. However, there are fundamental differences between African languages and languages such as English which have European roots. Language-specific differences that exist between the L1 and the L2 impact on the acquisition of early reading skills such as phonological awareness. The following language-specific differences between Southern Sotho and English affecting the acquisition of early reading skills were identified:

- *Origin*

Southern Sotho is part of the language subfamily Sotho, which originated from the Niger-Congo language group of Africa. English, part of the Germanic sub-group originated from the Indo-European language family. Southern Sotho and English, two of the eleven official languages of South Africa, display significant language-specific differences due to their genetic classification. These differences will impact on the development of literacy skills of Southern Sotho learners transferring to English as medium of instruction.

- *Structural differences*

Southern Sotho is classified as a synthetic language, and words display agglutinative characteristics in word formation. Structural analysis often precedes or accompanies the teaching of sight-word reading during the early literacy phase. The identification of word boundaries is also a problem area in African languages. Confusion with regard to word boundaries will impact on the development of phonological awareness skills in Southern Sotho. English, also classified as a synthetic language, represent a combination of the isolating,

agglutinative and fusional morphological varieties in word formation. Words in English also display many language-specific word structures, e.g. initial consonant clusters, consonant blends and rhyme that are absent in Southern Sotho. Negative transfer from Southern Sotho to English will influence the development of phonological awareness skills in English as well as the ability to perform phonological awareness tasks in English.

- *Phonological differences*

The phonemic inventory of a language is language-specific as it contains the specific sounds of the language. The development of phonological awareness in a L2 may be more difficult if languages display few similarities in respect of their phonemic inventories. The different phonemic inventories of Southern Sotho and English may lead to many phonological transfer errors, such as allophonic, phonetic and distributional errors when Southern Sotho ESL learners transfer to English as L2.

- *Prosodic differences.*

Prosodic differences between Southern Sotho and English influence the ability to perform phonological awareness tasks in English, such as segmentation of words into syllables, onset-rimes and phonemes. For example, tone in Southern Sotho has a semantic function. By contrast, in English, stress has a semantic function and is used to distinguish between nouns and verbs. Pronunciation of the L1 influences phonological processing abilities such as phonological re-coding in long-term memory. Errors in phonological re-coding lead to retrieval mismatches and will result in poor phonological awareness skills in English as L2.

- *Orthographic differences*

Southern Sotho represents a transparent orthography using the disjunctive way of writing words. English on the other hand, is represented by an opaque orthography employing the conjunctive way of writing words. These differences will impact on the development of phonological awareness skills as well as decoding skills in Southern Sotho and in English. It is therefore recommended that:

- Language educators should obtain as much information as possible regarding the pronunciation system of their learners' first language, and compare it to the sound system of English.
- Educators of ESL learners must acquire a broad repertoire of skills for teaching the grapheme-phoneme relationships in English to learners who may be unfamiliar with the English sound system.
- Southern Sotho learners should develop phonological awareness by means of activities that support not only reading but also writing skills in order to improve all language skills in English.

Article 3
Language-specific differences affecting the correlation between phonological awareness and early reading skills of grade 3 Southern Sotho learners in L1 and in English as L2

Summary

Research studies indicate that phonological awareness in words in the primary language is the most important predictor of reading ability as well as reading disability during the early literacy phase. However, language-specific differences (e.g. phonological, morphological and orthographic differences at word level) between languages seem to influence the correlation between phonological awareness and reading ability. To determine the influence of language-specific differences between Southern Sotho and English on the above-mentioned correlation the following research questions were raised:

- Will language-specific differences between Southern Sotho and English affect the level of phonological awareness skills of Southern Sotho learners in English as L2?
- Will language-specific differences impact on the correlation between phonological awareness skills and sight-word reading in Southern Sotho and in English as L2?

One hundred and twenty grade 3 Southern Sotho learners aged 9 to 10 years participated. Approximately sixty learners were assigned to two groups: mother-tongue instruction and instruction through the medium of English during the Foundation Phase. To address the first research question, both groups were tested on phonological awareness tests in Southern Sotho and in English to determine their level of phonological awareness in their mother tongue and in English as L2. A sentence segmentation test was also introduced to test the ability of Southern Sotho learners to segment sentences into words as this a problem area in African languages. The result from this test revealed that only 14% of Southern Sotho learners could correctly identify words in sentences in their L1, and 44% of ESL Southern Sotho learners could correctly identify the number of words in English sentences. This basic linguistic concept must be

addressed during the early literacy phase in Southern Sotho and in English as L2.

The results from the phonological awareness tests in Southern Sotho and in English indicated that Southern Sotho learners in both groups perform at the phonemic level, i.e. at the intermediate level between syllable awareness and the most sophisticated level of phoneme manipulation. Both groups had the lowest scores on phonological awareness tasks that represent linguistic structures that are absent in Southern Sotho. This is a clear indication that language-specific differences between Southern Sotho and English significantly influence the level of phonological awareness skills in English as L2. The results from the sight-word reading tests revealed that although both groups of Southern Sotho learners achieved the same level of phonological awareness, Southern Sotho mother-tongue learners performed better on the sight-word reading tests in their L1 than their counterparts in English as L2. This may be due to the fact that it is easier to achieve early reading success in phonetic languages.

To address the second research question two correlations were drawn to test the relationship between phonological awareness and an aspect of reading ability, namely sight-word reading in both languages.

- **Correlation 1**: Results from Southern Sotho learners in the SPAT and the SEPAT were correlated with results obtained from standardised reading and spelling tests in both languages.
- **Correlation 2**: The results from Southern Sotho learners in the oral sub-tests of the SEPAT and the SPAT were correlated with their results in the non-word reading and spelling tests of the SEPAT and the SPAT.

The results from Correlation 1 and 2 indicate that for both groups the correlation coefficient is between 0.4 – 0.6, indicating a moderate to a high correlation between the two variables. This is however, not an indication of a causal relationship. Additional factors, e.g. in this study, language-specific differences between the L1 and L2 also contribute to the relationship between the variables.

It is therefore recommended that:

- Direct and specific instruction is given regarding the sound-symbol relationship that exists in words in English (phonics instruction).
- The mother tongue should be used as the medium of instruction for as long as possible in order to develop cognitive academic skills in all learners.
- A standardised Southern Sotho phonological awareness test is developed as a diagnostic test to identify Southern Sotho learners who are risk for future reading problems.

Artikel 1

Die ontwikkeling van fonologiese bewustheid in 'n eerste taal en in Engels as 'n tweede taal tydens die aanvangsleesfase.

Opsomming

Wanneer die ontwikkeling van fonologiese bewustheid in 'n eerste en in 'n tweede taal bestudeer word, moet daar allereers op die belangrikheid van verwerwing van leesgereedheidsvaardighede (soos fonologiese bewustheid) gelet word en hoe dit aanvangslees ondersteun. Voorbereidende leesvaardighede in alfabetiese tale sluit kennis van 'n verskeidenheid van leesgereedheidsvaardighede in, soos byvoorbeeld dat geskrewe woorde betekenis oordra, dat woorde uit 'n reeks opeenvolgende klanke bestaan en dat klanke in woorde min of meer deur ooreenstemmende simbole verteenwoordig word. Die ontwikkeling van fonologiese bewustheid sowel as klank-simbool ontsluiting ondersteun dus die ontwikkeling van 'n sigwoordeskat. Internasionale navorsing beskou fonologiese bewustheid as een van die belangrikste voorspellers van leesvermoë asook moontlike leesprobleme tydens die aanvangsleesfase.

Fonologiese bewustheid vorm deel van 'n groter konstruk, naamlik fonologiese prosessering. Navorsing toon aan dat fonologiese prosessering twee dimensies verteenwoordig, naamlik kodering en klankbewustheid (phonological awareness). Fonologiese koderingsprosesse sluit in fonetiese en fonologiese herkodering in die kort- en langtermyngeheue, wat weer 'n belangrike rol in woordherkenning speel. Fonologiese of klankbewustheid dui op die bewuswees van alle klankeenhede in 'n taal; van woorde in sinne tot indiwiduele foneme in woorde. Fonologiewe bewustheid verwys ook na die vermoë om 'n verskeidenheid fonemiese take uit te voer. Die maklikste take is om woorde in sinne te onderskei, woorde in lettergrepe te verdeel, rymherkenning en om klanke saam te voeg om woorde te vorm. Die moeilikste fonemiese take is om indiwiduele foneme in woorde te identifiseer en te manipuleer. Fonologiese bewustheid is deel van algemene taalontwikkeling van normale kinders tydens die voorskoolse

jare. Woordeskatuitbreiding lei tot eksplisiete bewus wees van klanke in woorde. Die hoogste vlak van fonologiese bewustheid, naamlik bewustheid van indiwiduele foneme in woorde, ontwikkel slegs wanneer daar met formele leesonderrig begin word.

Fonemiese bewustheid ontwikkel vinnig en maklik in fonetiese tale wat deur deursigtige (transparent) ortografieë verteenwoordig word (byvoorbeeld Suid-Sotho en Afrikaans). Dit is waarskynlik as gevolg van die direkte verteenwoordiging van klanke deur ooreenstemmende simbole. Die grootste uitdaging vir Suid-Sotho aanvangslesers is egter om woordgrense korrek te identifiseer en om woorde korrek te skryf. Woorde in Afrikatale word konjunktief (Nguni tale) of disjunktief (Sotho tale) geskryf. Die verskillende wyses waarop woorde in Afrikatale geskryf word, lei tot probleme om woordgrense te bepaal. Suid-Sotho aanvangslesers moet dus voorbereidende leesvaardighede ontwikkel om lees- sowel as skryfvaardighede te ondersteun.

Die ontwikkeling van fonemiese bewustheid in Engels as eerste taal sal moeiliker wees omdat Engels deur 'n ondeursigtige (opaque) ortografie verteenwoordig word. In Engels is daar baie klanke in woorde wat nie direk met hul ooreenstemmende simbole verbind kan word nie. Die vermoë om woorde in lettergrepe te verdeel en om foneme in woorde te manipuleer is die beste voorspellers van leesvermoë in Engels. Die ontwikkeling van fonemiese bewustheid in Engels as tweede taal sal verskil ten opsigte van die ontwikkeling van fonemiese bewustheid in Suid-Sotho as moedertaal. Taalspesifieke verskille (fonologiese, morfologiese en ortografiese verskille) wat tussen tale bestaan sal die ontwikkeling van fonologiese bewustheid in 'n tweede taal beïnvloed, veral as daar min ooreenkomste tussen diè tale bestaan, (soos byoorbeeld tussen Suid-Sotho en Engels). Engels tweede taal leerders mag dus fonemiese bewustheid teen 'n stadiger tempo en op 'n later stadium in Engels ontwikkel. Engels tweede taal leerders mag ook 'n laer vlak van fonologiese bewustheid in Engels bereik indien hulle nie intensiewe onderrig in die klanke-simbool verbinding in Engels ontvang nie. Hierdie agterstand mag tot ernstige lees-, spel- en skryfprobleme in Engels lei. Bykomende faktore, soos gebrekkige kommunikasievaardighede,

gebrekkige woordeskat en kulturele agtergrond mag die ontwikkeling van vroeë leesvaardighede verder nadelig beïnvloed. Dit word dus aanbeveel dat leesonderrig eerstens op die ontwikkeling van moedertaalvaardighede sal fokus omdat eerste taal vaardighede as metavaardighede na 'n tweede taal oorgedra wat die ontwikkeling van soortgelyke taalvaardighede in 'n tweede taal ondersteun. Ouditiewe vaardighededede, soos byvoorbeeld luister- en gespreksvaardighede moet ontwikkel word sodat Engels tweede taal leerders met die klanke en taal-spesifieke woordstrukture in Engels vertroud kan raak.

Artikel 2

Fonologiese bewustheid in Suid-Sotho leerders: Taalspesifieke verskille wat die ontwikkeling van aanvangsleesvaardighede in Engels as tweede taal beïnvloed.

Opsomming

Navorsing wat die algemene and taalspesifieke eienskappe van leesontwikkeling ondersoek, toon aan dat fonologiese bewustheid aanvangslees ondersteun in tale wat deur 'n deursigtige (transparent) sowel as 'n ondeursigtige (opaque) ortografie verteenwoordig word. Daar is egter wesenlike taalspesifieke verskille tussen Afrikatale (byvoorbeeld Suid-Sotho) en Engels wat 'n Europese oorpsrong het. Suid-Sotho en Engels beskik ook oor spesifieke fonologiese, morfologiese en ortografiese taalstrukture wat beduidend van mekaar verskil. Taalspesifieke verskille tussen tale sal die ontwikkeling van aanvangsleesvaardighede, soos fonologiese bewustheid, in 'n tweede taal beïnvloed, veral as daar beduidende verskille tussen diè tale bestaan. Die volgende taalspesifieke verskille tussen Suid-Sotho en Engels wat aanvangsleesvaardighede in Engels beïnvloed, word kortliks bespreek.

- *Oorsprong*

  Suid-Sotho vorm deel van die Sotho taalfamilie afkomstig van die Niger-Kongo taalgroep van Afrika. Engels is deel van die Germaanse taalfamilie afkomstig van die Indo-Europese taalgroep. Suid-Sotho en Engels, twee van die elf amptelike tale van Suid-Afrika, toon wesenlike verskille wat hul herkoms aanbetref. Hierdie verskille sal leesgereedheidsvaardighede (soos fonologiese bewustheid) in Engels as tweede taal nadelig beïnvloed.

- *Strukturele (morfologiese) verskille*

  Suid-Sotho is 'n sintetiese taal wat agglutinerende eienskappe in woordvorming vertoon. Suid-Sotho woorde bestaan uit 'n reeks morfeme wat in 'n spesifieke volgorde namekaar verskyn. Alle Suid-Sotho woorde begin met 'n enkele konsonant en eindig op 'n vokaal of /ng/. Kennis van morfeme asook die vermoë om woorde in morfeme te verdeel is net so belangrik as

fonologiese bewustheid in woordherkenning. Tans is daar geen eenvormige manier om woordgrense in Afrikatale te bepaal nie. Daar is dikwels verwarring waar woorde begin en eindig. Hierdie verwarring sal probleme vir aanvangslesers in Afrikatale veroorsaak wanneer fonologiese bewustheid in die moedertaal en ook in Engels as tweede taal ontwikkel moet word.
Engels is ook 'n sintetiese taal, maar vertoon isolerende, agglutinerende en verbindingselemente in woordvorming. Woorde in Engels word meestal gevorm deur voor- en agtervoegsels aan stamme te voeg. In baie gevalle kan stamwoorde selfstandig funksioneer. Stamwoorde kom selde in Suid-Sotho voor. Woorde in Engels bevat ook taalspesifieke woordstrukture, soos byvoorbeeld konsonantgroeperings en rym wat onbekend in Suid-Sotho is. Fonologiese take wat woordherkenning in Engels ondersteun sal dus nie dieselfde funksie in Suid-Sotho verrig nie.

- *Fonologiese verskille*

Tale beskik oor hul eie unieke klanke. Dit sal dus moeiliker wees om klanke in 'n vreemde taal te herken wat beduidend van die moedertaal verskil, soos byvoorbeeld die taalklanke van Suid-Sotho en Engels. Die verskillende klanke wat in hierdie twee tale voorkom kan dus probleme vir Suid-Sotho leerders veroorsaak wanneer hulle aanvangsleesvaardighede in Engels as tweede taal moet ontwikkel. Oordrag vanaf die moedertaal mag tot allofoniese, fonetiese en distributiewe oordragsfoute lei. Fonologiese oordragsfoute lei gewoonlik tot gebrekkige fonemiese bewustheid wat weer lees-, spel- en skryffoute veroorsaak.

- *Prosodiese verskille*

Prosodiese verskille tussen Suid-Sotho en Engels beïnvloed ook die vermoë om fonologiese take korrek uit te voer. Suid-Sotho is 'n toontaal. Toon in Suid-Sotho het 'n semantiese funksie, terwyl aksent in Engels die semantiese funksie vervul. Foutiewe uitspraak beïnvloed fonologiese prosessering wat weer die foutiewe herroeping van klanke uit die lang-termyn geheue tot gevolg het. Dit mag probleme veroorsaak wanneer Engels tweede taal leerders fonologiese bewustheid in Engels moet ontwikkel.

- *Ortografiese verskille*

Suid-Sotho word deur 'n deursigtige (transparent) ortografie beskryf en maak gebruik van die disjunktiewe skryfwyse. Engels word op sy beurt deur 'n ondeursigtige (opaque) ortografie verteenwoordig en skryf woorde konjunktief. Hierdie verskille sal alle voorbereidende leesvaardighede beïnvloed.

As gevolg van hierdie taalspesifieke verskille wat tussen Suid-Sotho en Engels bestaan , word dit dus aanbeveel dat:

- Opvoeders in die taalleerarea soveel as moontlik omtrent die eerste taal van hulle leerders sal uitvind en hoe dit van Engels verskil, sodat hierdie verskille aan die leerders uitgewys kan word.
- Opvoeders oor vaardighede moet beskik om leerders bekend te stel aan die eiesoortige klanke wat in Engels voorkom en watter simbole hierdie klanke voorstel (phonics instruction).
- Suid-Sotho leerders moet ondersteun word om nie net leestake te bemeester nie, maar ook om spel- en skryfvaardighede in Engels as tweede taal te ontwikkel.

Artikel 3

Taalspesifieke verskille wat die korrelasie tussen fonologiese bewustheid en aanvangsleesvaardighede van graad 3 Suid-Sotho leerders in die moedertaal en in Engels as tweede taal beïnvloed.

Opsomming

Internasionale navorsing bewys dat fonologiese bewustheid in die moedertaal die belangrikste voorspeller van leesvermoë sowel as leesprobleme tydens die aanvangsleesfase is. Dit blyk egter dat taalspesifieke verskille wat tussen tale bestaan (fonologiese, morfologiese en ortografiese verskille) die korrelasie tussen fonologiese bewustheid en leesvermoë beïnvloed. Om die invloed van taalspesifieke verskille wat tussen Suid-Sotho en Engels bestaan, op bogenoemde korrelasie te bepaal, is die volgende navorsingsvrae gestel:

- Sal taalspesifieke verskille tussen Suid-Sotho en Engels die vlak van fonologiese bewustheid van Suid-Sotho leerders in Engels as tweede taal beïnvloed?
- Sal taalspesifieke verskille die korrelasie tussen fonologiese bewustheid en sigwoordherkenning in Suid-Sotho en in Engels as tweede taal beïnvloed?

Een honderd en twintig graad 3 Suid-Sotho leerders, (ouderdom 9 tot 10 jaar) is by die ondersoek betrek. Ongeveer 60 leerders is aan twee eksperimentele groepe toegewys: Moedertaalleerders en leerders wat Engels-medium onderrig tydens die Grondslagfase ontvang het. Om die eerste navorsingsvraag aan te spreek is albei groepe se vlak van fonologiese bewustheid met fonologiese bewustheidstoetse in die moedertaal en in Engels gemeet. Die vermoë om die aantal woorde in 'n sin te identifiseer is vooraf getoets omdat dit 'n probleemarea in Afrikatale is. 'n Woordherkenningstoets, naamlik die *Sentence Segmentation Test (SST)* is hiervoor gebruik. Die resultate toon aan dat slegs 14% graad drie Suid-Sotho moedertaalsprekers die korrekte aantal woorde in Suid-Sotho sinne kon identifiseer, en 44% Suid-Sotho leerders wat in Egnels onderrig ontvang die korrekte aantal woorde in Engelse sinne. Dit is duidelik dat hierdie belangrike

taalkonsep nie gedurende die Grondslagfase onderrig word nie. Die resultate afkomstig van die fonologiese bewustheidstoetse dui aan dat beide groepe Suid-Sotho leerders op die fonemiese vlak funksioneer; dus op die intermediêre vlak, tussen die sillabiese en die mees gevorderde vlak van foneemmanipulasie. Albei groepe het die swakste gevaar op fonologiese take wat woorde bevat het wat taalspesifieke strukture insluit wat nie in Suid-Sotho voorkom nie (byvoorbeeld rym en konsonantgroeperings in woorde). Dit dui aan dat taalspesifieke verskille tussen Suid-Sotho en Engels die vlak van fonologiese bewustheid in Engels as tweede taal nadelig beïnvloed.

Alhoewel die twee groepe ongeveer dieselfde vlak van fonemiese bewustheid het, toon die resultate van die sigwoordherkenningstoetse dat Suid-sotho moedertaalleerders baie beter kan lees as dié leerders wat deur middel van Engels tydens die Grondslag onderrig word. Dit is waarskynlik te wyte aan die feit dat dit makliker is om in fonetiese tale te lees, as in tale soos Engels, wat deur 'n ondeursigtige (opaque) ortografie beskryf word.

Om die korrelasie tussen fonologiese bewustheid en 'n belangrike komponent van leesvaardighede, naamlik sigwoordherkenning te bepaal, is twee korrelasies bereken:

- **Korrelasie 1:** Die resultate van Suid-Sotho leerders op die fonologiese toetse is met die resultate op die gestandaardiseerde lees- en speltoetse in Suid-Sotho en Engels behaal is, gekorreleer.
- **Korrelasie 2:** Die resultate wat Suid-Sotho leerders op die ouditiewe subtoetse en op die nie-woord lees- en speltoetse (deel van die fonologiese toetse) behaal het , is met mekaar gekorreleer.

Vir beide korrelasies was die korrelasie koëffisiënt tussen 0.4 en 0.6. Dit dui op 'n matige tot sterk verband tussen die veranderlikes. Die resultate dui egter nie op 'n oorsaaklike verband tussen die veranderlikes nie. Bykomende faktore, (byvoorbeeld taalspesifieke verskille wat tussen Suid-Sotho en Engels bestaan) het die korrelasie tussen die veranderlikes beïnvloed.

Om Engels tweede taal leerders dus tydens die aanvangsleesfase te ondersteun, word aanbeveel dat:

- Fonologiese bewustheid ontwikkel word in die moedertaal, maar ook in Engels as tweede taal, omdat swart Suid-Afrikaanse leerders aan die begin van graad vier na Engels as taal van onderrig en leer oorskakel.
- Deeglike onderrig verskaf word in simbool-klankverbinding in Engels (decoding skills). Dit sal lees, skryf en spelvaardighede in Engels verbeter.
- 'n Gestandardiseerde fonologiese bewustheidstoets as diagnostiese toets in Suid-Sotho ontwikkel sal word om toekomstige leesprobleme by Suid-Sotho leerders tydens die aanvangsleesfase te identifiseer..

KEY CONCEPTS	SLEUTELBEGRIPPE
English	Afrikaans
early reading skills	voorbereidende leesvaardighede
phonological awareness	fonologiese bewustheid
phoneme awareness	fonemiese bewustheid
phonological awareness tasks	fonologiese bewustheidstake
sight-word reading	sigwoordlees
transparent orthography	deursigtige ortografie
opaque orthograhpy	ondeursigtige ortografie
language-specific differences	taalspesifieke verskille
metalinguistic skills	metavaardighede