PHONOLOGICAL AWARENESS SKILLS OF A GROUP OF GRADE 4 LEARNERS, IN A MULTI-CULTURAL, MULTI-LINGUAL EDUCATION CONTEXT WITH ENGLISH AS LANGUAGE OF LEARNING AND TEACHING (ELoLT)

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Submitted in partial fulfillment of the requirements for the degree of
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DECLARATION

I hereby declare that this thesis is entirely my own work and that it has never before been submitted to any tertiary or other institution for any purposes whatsoever.

This declaration unequivocally states that this is my own, original work. Where secondary material has been used (either from a printed source, a previous unpublished research report or any electronic media), this has been meticulously acknowledged and referenced.

I also declare that I fully understand what plagiarism is, that it is a crime punishable by law, and that I am well-informed about the University of Pretoria's policy in this regard.

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Coralié Elizabeth Vermaak

30 September 2006

ABSTRACT

TITLE:	*Phonological awareness skills of a group of Grade 4 learners in a multi-cultural, multi-lingual education context with English as Language of Learning and Teaching (ELoLT).*
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Rationale: The importance of well developed phonological awareness and the effect of poor phonological awareness skills on reading and spelling have long been recognised. However, a dearth of research exists regarding populations in multi-cultural, multi-lingual contexts both nationally and internationally. This issue is of particular importance in the South African context where many Black learners in the school setting have no other choice than English as the Language of Learning and Teaching (ELoLT).

Aim: The purpose of the study was to explore the effect of a multi-cultural, multi-lingual context on the English phonological awareness skills of a group of Black Grade 4 learners in a primary school setting in South Africa.

Method: An exploratory, descriptive and contextual research design was implemented, which incorporated both quantitative and qualitative paradigms. An assessment battery consisting of formal and informal assessments was used to determine levels of development. The researcher endeavoured to find statistical correlations between the participants' phonological awareness skills on the one hand, and their phonological abilities, their expressive and receptive language abilities, and their reading and spelling abilities in ELoLT on the other.

Participants: Fifteen Black Grade 4 learners, each with a Black language as mother tongue, who attended a mainstream school where English was the language of

learning and teaching (ELoLT), participated in the study. The participants' ages ranged between 9 years 11 months, and 10 years 11 months.

Results: The participants' *phonological abilities* in English as LoLT showed that 47% of the participants produced the target consonants with a consonant approximation, and vowel approximations were produced by all of the participants in single words. All fifteen the participants' expressive and receptive *language abilities* in English as their LoLT, were on a below-average level and their *expressive language abilities* were more advanced than their *receptive language abilities*. All the participants evidenced problems in terms of their *phonological awareness skills*. Based on the results obtained for *reading decoding abilities,* only one third of the participants could be considered to be readers of an average standard. The *reading comprehension abilities* of all the participants were on a lower level than those of first language speakers of Standard South African English. Furthermore, the participants' *spelling abilities* in English as LoLT were not age-appropriate. Even though no significant correlation could be determined between the participants' reading comprehension and phonological awareness skills (due to the fact that memory probably played a role in their reading comprehension), it was statistically determined that their poor phonological awareness skills could be associated with their below-average phonological, receptive and expressive language, reading decoding, and spelling abilities.

Conclusions: The results of this research have implications for the role of speech-language therapists in terms of collaboration, prevention, assessment, and intervention where the development of these learners' phonological awareness skills is concerned. Clinical implications focus on the dissemination of information, therapy planning, and EAL learner support. The need for further research in this field is emphasised.

KEY WORDS: Phonological awareness skills, multi-cultural, multi-lingual, Black South African English (BSAE), English as Additional Language (EAL), English as Language of Learning and Teaching (ELoLT).

OPSOMMING

Rasionaal: Die belang van toereikende ontwikkeling van fonogiese bewustheid en die invloed wat swak fonologiese bewustheidsvaardighede op lees- en spelvermoë kan hê, is reeds lank bekend, maar daar bestaan sowel nasionaal en internasionaal ‘n navorsingsleemte ten opsigte van bevolkingsgroepe in 'n multikulturele, meertalige konteks. Hierdie aangeleentheid is veral belangrik in die Suid-Afrikaanse konteks waar ‘n groot hoeveelheid Swart leerders in die skoolkonteks in terme van onderrigtaal geen ander keuse as Engels het nie.

Doel: Die doel van die studie was om die invloed van 'n multikulturele, meertalige konteks op die Engelse fonologiese bewustheidsvaardighede van ‘n groep Swart leerders in Graad 4 in ‘n laerskoolkonteks in Suid-Afrika te bepaal.

Metode: ‘n Eksploratiewe, beskrywende en kontekstuele navorsings-ontwerp is geïmplimenteer wat sowel die kwantitatiewe as kwalitatiewe paradigmas ingesluit het. ‘n Evalueringsbattery wat vir formele én informele assesering toegelaat het, is benut om ontwikkelingsvlakke te bepaal. Die navorser het gepoog om statistiese korrelasies tussen die deelnemers se Engelse fonologiese bewustheidsvaardighede aan die een kant en hul fonologiese vermoë, ekspressiewe en reseptiewe taalvermoë en hulle lees- en spelvermoë in Engels (as onderrigtaal) aan die ander kant te bepaal.

Deelnemers: Vyftien Swart leerders in Graad 4, waarvan elkeen 'n Swart taal as moedertaal het maar hul skoolopleiding in 'n hoofstroomskool waar Engels die enigste voertaal was ontvang het, het aan hierdie navorsingsprojek deelgeneem. Die ouderdomme van die deelnemers het gestrek vanaf 9 jaar 11 maande tot 10 jaar 11 maande.

Resultate: Die deelnemers se *fonologiese vermoë* in Engels as onderrigtaal het daarop gedui dat 47% van die deelnemers die teikenkonsonante met ‘n konsonantbenadering uitgespreek het, terwyl vokaalbenaderings in enkelwoorde by al die deelnemers voorgekom het. Al vyftien die deelnemers se *ekspressiewe en reseptiewe taalvermoë* in Engels as onderrigtaal was ondergemiddeld, en hul *ekspressiewe taalvermoë* was beter ontwikkel as hul *reseptiewe taalvermoë*. Al die

deelnemers het *fonologiese bewustheids-uitvalle* vertoon. Slegs ‘n derde van die deelnemers kon, op grond van die resultate van hul *leesdekodering,* as gemiddelde lesers beskryf word. Die *leesbegrip* van die deelnemers was op ‘n laer vlak as dié van eerstetaalsprekers van Engels. Verder het die resultate ten opsigte van die deelnemers se *spelvermoë* daarop gedui dat hul spelvermoë in Engels as onderrigtaal ondergemiddeld is. Alhoewel daar nie ‘n korrelasie tussen die deelnemers se leesbegripsvermoë en hul fonologiese bewustheids-vaardighede bepaal kon word nie (aangesien geheue in alle waarskynlikheid hierdie resultate beïnvloed het), kon dit statisties bepaal word dat die deelnemers se swak fonologiese bewustheidsvaardighede in verband gebring kon word met hul ondergemiddelde fonologiese vermoë, reseptiewe en ekspressiewe taalvermoë, leesdekoderingsvermoë én spelvermoë.

Samevatting: Die resultate van die studie het implikasies vir die rol van die spraak-taalterapeut ten opsigte van samewerking, voorkoming, evaluering en intervensie rakende die ontwikeling van fonologiese bewustheidsvaardighede van leerders in ‘n multikulturele, meertalige onerwyskonteks waar die onderrigstrategie uitkomsgebaseerd is. Kliniese implikasies van die studie fokus op verskaffing van inligting, terapiebeplanning en ondersteuning aan leerders met Engels as addisionele taal. Die behoefte vir verdere navorsing in hierdie studiegebied is beklemtoon.

SLEUTELWOORDE: Fonologiese bewustheid, multikultureel, meertalig, Swart Suid-Afrikaanse Engels, Engels as addisionele taal, Engels as onderrigtaal.

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CHAPTER 1

INTRODUCTION AND ORIENTATION TO THE PHONOLOGICAL AWARENESS SKILLS OF LEARNERS IN THE MULTI-CULTURAL, MULTI-LINGUAL SOUTH AFRICAN EDUCATION CONTEXT

Chapter aims: This chapter aims to identify and describe the need for research into phonological awareness skills within the multi-cultural, multi-lingual South African education context, to present a well-formulated problem statement and rationale for the study, to provide an outline of the chapters included in this thesis, and to discuss the terminology and abbreviations used in this thesis.

1.1 INTRODUCTION

"Most researchers who have studied both monolinguals and bilinguals undoubtedly agree that working with bilinguals is a more difficult and challenging enterprise."

(Grosjean, 1998:131)

Internationally, researchers agree that academic success depends largely on a learner's language ability (Hoff, 2005; Owens, 2001; Owens, 1999). In the case where a learner's receptive and expressive language skills are not age-appropriate, he/she will experience the scholastic demands of the educational setting as a learning barrier and will struggle to cope with these demands (Owens, 2001). Although these language skills develop from a young age (Rossetti, 2001), it is of paramount importance that an individual's phonological awareness skills should expand in concurrence with their language development. The development of basic receptive and expressive language skills serves as underpinning for the adequate development of phonological awareness skills.

Academic success is therefore largely dependent on a learner's phonological awareness skills and according to Stackhouse (1997:157) phonological awareness is "the ability to reflect on and manipulate the structure of an utterance (e.g. into words, syllables and sounds) as distinct from its meaning." A learner's language ability needs to be developed to a level where the learner is able to think and reflect on the structure of the words, syllables and sounds (Stackhouse, 1997), thus leading to the

development of the meta-linguistic skill of phonological awareness. Phonological awareness is a component of meta-linguistics, which develops due to the higher cognitive level of language use (Goldsworthy, 2001). The knowledge that a word consists of smaller units leads the learner to understand that he/she can divide them into sounds, syllables, and sub-syllabic constituents (McFadden, 1998). Furthermore, the learner becomes aware that these constituents can be manipulated (Goldsworthy, 2001) The learner will not be ready for reading and writing instruction until he/she reaches this meta-linguistic level of language use (Larrivee & Catts, 1999; McFadden, 1998; Van Kleeck, Gillam & McFadden, 1998). Learners with poorly developed phonological awareness skills will most likely struggle with reading and spelling, because they will only be able to read and write age-appropriately when they know how to render a graphemic representation of the phonological structure (Goldsworthy, 2001).

The age-appropriate development of phonological awareness is initiated from as young as two years of age when the child is exposed to rhyme, alliteration and stories (Roth & Baden, 2001). The development of phonological awareness skills ranges along a continuum of shallow, deep, and sophisticated levels of awareness (Bernthal & Bankson, 2004). Figure 1.1 presents a visual representation of the development of phonological awareness skills.

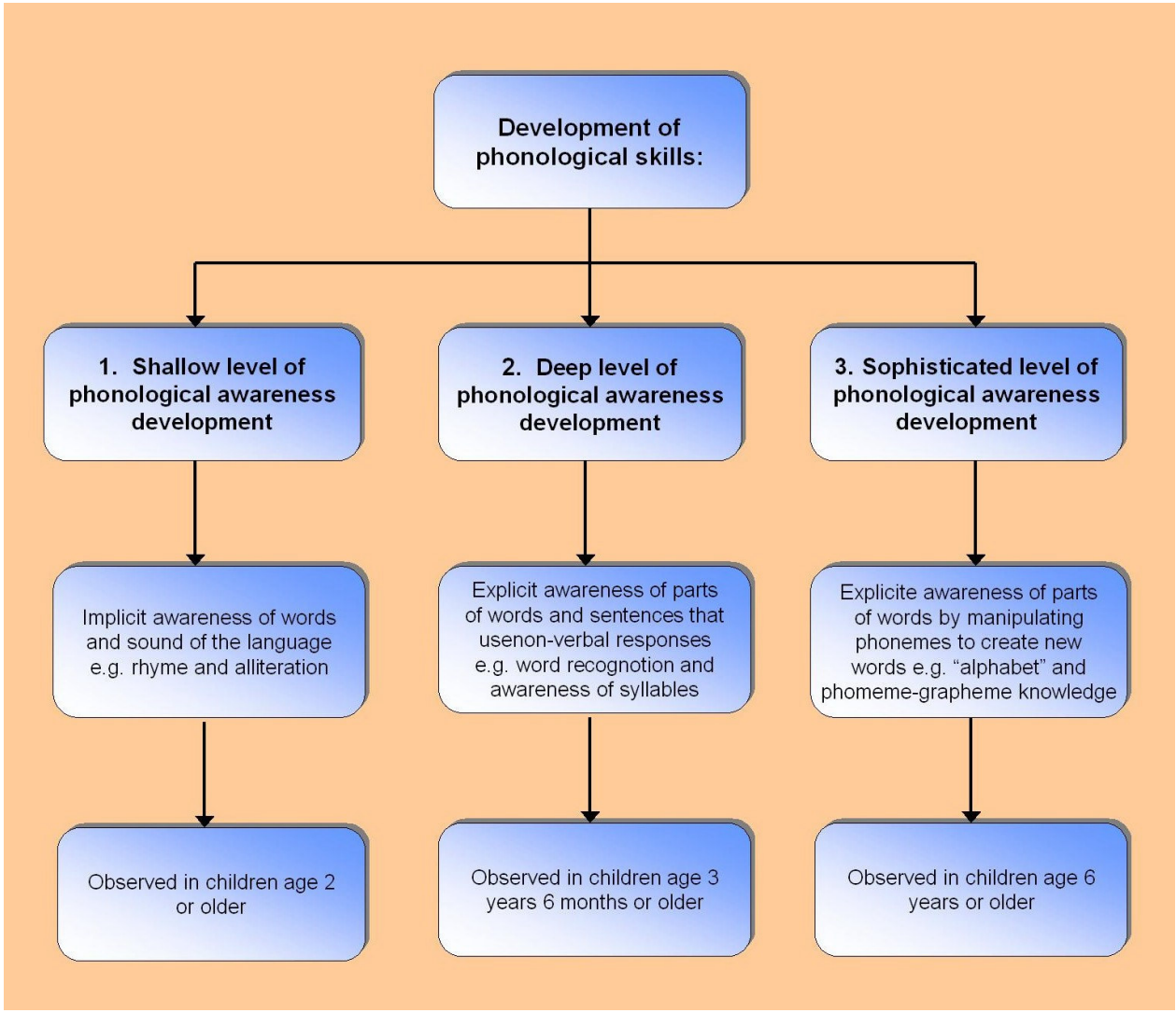


Figure 1.1: An overview of the development of phonological awareness skills (based on Bernthal & Bankson, 2004; Justice, Invernizzi, & Meier, 2002; Goldsworthy, 2001).

According to Figure 1.1 the first stage of the development of phonological awareness skills commences at approximately two years of age and can be labelled the 'shallow level' on the continuum of phonological awareness development (Justice & Schuele as cited in Bernthal & Bankson, 2004; Goldsworthy, 2001; Invernizzi, Meier, Swank & Juel, 2000). During this stage, the child develops sensitivity for sound patterns that recur across and within words but is unable to consciously represent or reflect upon the discreet phonemic elements of words (Justice & Schuele as cited in Bernthal & Bankson, 2004). As the child's phonological awareness skills mature, a child reaches the 'deep level' of phonological awareness development where the ability to compare, contrast and manipulate phonological segments within and across syllables and words

develops (Bernthal & Bankson, 2004). On the final and last level, namely the 'sophisticated level', the learner is able to analyse and segment words or syllables into their constituent phonemes (Bernthal & Bankson, 2004; Goldsworthy, 2001).

The development of phonological awareness skills has been extensively investigated by research over a number of years. This research has proved that these skills were often framed within the context of the successful development of learners' reading and spelling ability (Bernthal and Bankson, 2004; Owens, 2004; Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998). Since these skills develop from an early age, the use of a 'proactive and preventative approach' (Justice, Invernizzi & Meier, 2002) is advocated to identify those children that may be at risk for future literacy problems (Justice et al., 2002). Research has indicated that additional instruction focusing on early literacy performance will enhance this performance (Invernizzi & Robey, 2001). Although Invernizzy and Robey (2001) conducted their research on monolingual populations, their findings may also apply to multi-lingual populations. Increased interest in the development of phonological awareness has given rise to an approach in which speech-language therapists can ensure, by applying the appropriate techniques and implementing well-designed programmes, effective and efficient service delivery to learners through evidence-based practice (Dollaghan, 2004).

Evidence-based practice in the management of phonological awareness disorders is being promoted (Justice, Invernizzi & Meier, 2002), but despite all these developments and their importance for the child's educational progress, limited research has been conducted on phonological awareness in multi-cultural, multi-lingual contexts. Recently, research interest in phonological awareness and multi-lingualism has been generated internationally (Ayoun, 2004; Muter & Diethelm, 2001; Courcy, Béland, Pitchford, 2000). Yet, in South Africa, in spite of the challenges facing speech-language therapists and educationalists, a dearth regarding research into phonological awareness in a multi-cultural, multi-lingual society still exists.

Speech-language therapists in South Africa have to cope with learners from diverse linguistic and cultural backgrounds. Therefore, these professionals have only the outcomes of international research, which does not adequately provide for the local

context, to rely on. Addressing these issues through context-appropriate research will limit the far-reaching detrimental effect that disordered phonological skills may have on the learner's successful educational progress. In order to ensure scholastic success speech-language therapists need to investigate the local context in terms of phonological awareness skills, the prevention of disorders in these skills, the assessment of these skills, and effective, ethically accountable management of these skills.

1.1.1 Language and scholastic issues associated with phonological awareness skills

It is evident from research findings that the phonological awareness skills of individual learners can have far-reaching effects on their academic success (Larrivee & Catts, 1999; McFadden, 1998; Van Kleeck, Gillam & McFadden, 1998). In an effort to elucidate the integrated language and scholastic issues related to phonological awareness, the researcher provides a visual representation of the content of the rest of the argument underpinning the research in Figure 1.2.

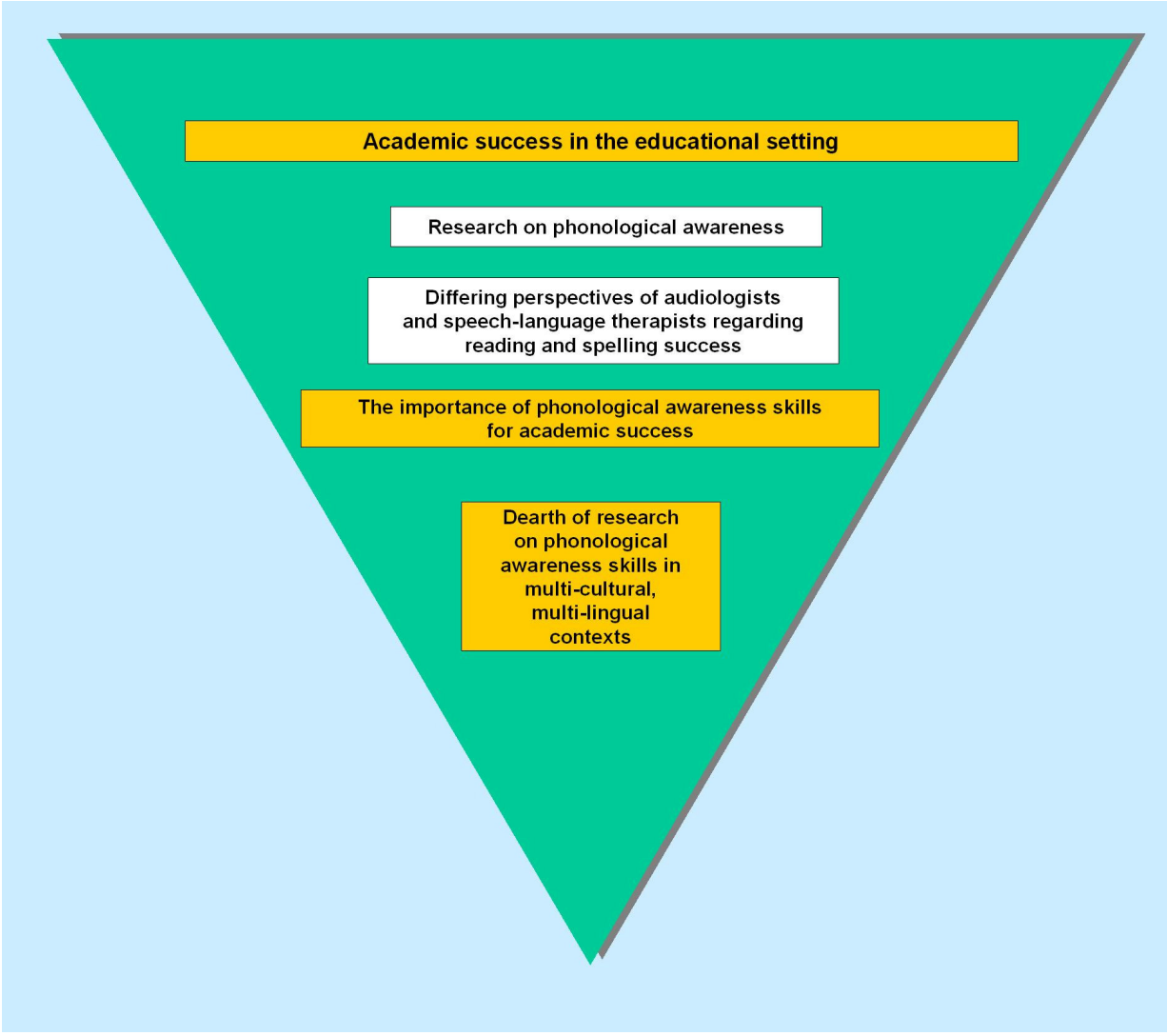


Figure 1.2: Issues surrounding phonological awareness skills.

Figure 1.2 illustrates important issues associated with phonological awareness skills. As discussed previously, phonological awareness skills are a prerequisite for academic success, which is the primary goal of every learner who enters the educational system. Academic failure may have a negative impact on learners' socio-emotional, interpersonal and vocational development (Bernthal & Bankson, 2004). International education research (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995) strives to provide insight in the further improvement of learners' academic success and this research generally focuses on different language related areas (such as reading and spelling success); different perspectives, and on professions such as Speech-Language Therapy, Remedial Teaching and Occupational Therapy.

From the perspective of the speech-language therapist, intervention tends to focus on the learners' language development in order to provide a foundation for the development of appropriate reading and spelling skills as a basis for academic success (Larrivee & Catts, 1999; McFadden, 1998; Van Kleeck, Gillam & McFadden, 1998). A sound language basis is required to enable the learner to cope with meta-linguistic skills such as reading and spelling (Owens, 1999), which enable a learner to reach his/her full academic potential (Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998).

The foundation of reading and spelling success is, according to many teachers, age-appropriate phonological awareness skills, and there is consensus that this meta-linguistic ability may be the most important predictor of later reading and spelling success (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, McFadden, 1998). If a learner does not have awareness of phonemes in words, that learner will not be able to learn to use the graphemic representations of phonological structures because inadequate awareness of sound structure makes it difficult to learn phoneme-grapheme correspondence (Goldsworthy, 2001). Poor phoneme-grapheme correspondence will lead to poorly developed decoding and word recognition abilities, which are necessary for reading and spelling success (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995). Furthermore, international researchers, focusing on reading and spelling skills, agree that poor phonological skills may lead to poor academic progress (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995).

Phonological awareness skills and its effect on academic success have been thoroughly researched within the field of speech-language therapy (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998). These skills are viewed from somewhat 'different' perspectives by the professions of Speech-Language Pathology and Audiology. In the field of Audiology the main focus appears to be on auditory and neurological aspects associated with reading and spelling, whilst in Speech-Language Pathology the focus is primarily on the linguistic and neurological aspects associated with reading and spelling (Bellis, 2003; Goldsworthy, 2001). Auditory processing refers to a learner's ability to make sense of auditory information

(ASHA Task Force, 1996; ASHA, 2005). Although many researchers view auditory processing to be a purely auditory issue, Bellis (2003) and Medwetsky (2002) emphasise the neurological basis of auditory processing and the influence of language on this processing ability (ASHA Task Force, 1996; ASHA, 2005; McFarland & Cacace, 1997; Katz & Wilde, 1994, as cited in Visser, 2005).

When an auditory processing problem is present in combination with a language disorder, speech-language therapists regard this phenomenon as a phonological awareness disorder (ASHA, 2005). Although the two professions differentiate between an auditory processing disorder and a delay in phonological awareness skills, they do agree that these skills are the most important predictors of reading and spelling success (Visser, 2005; Bellis, 2003; Van Kleeck et al., 1998).

As stated above, phonological awareness is an extremely important skill because age-appropriate development of this skill facilitates the development of age-appropriate reading and spelling skills, and consequently academic success as well (Bellis, 2003; Van Kleeck et al., 1998). Extensive research has been conducted on school-aged populations to determine the effect of phonological awareness on reading and spelling success. However, as mentioned previously, this research was mostly conducted on monolingual populations, and a shortfall in research exists regarding the phonological awareness skills of learners who are required to function in the South African multi-cultural, multi-lingual education context (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995).

The limited research into the effect of a multi-cultural and multi-lingual setting on phonological awareness skills is of particular importance within the South African context. This unique context comprises the 'rainbow-nation' variety of cultures and 11 official languages (Broom, 2004; Chick, 2002; Mutasa, 2000). Learners in South Africa face the challenge that they are mostly taught in English as Language of Learning and Teaching (ELoLT), and not in their mother tongue (Broom, 2004). The very common use of Black South African English (BSAE), which is not characterised by a formal structure or language rules and is as yet not recognised as a standard of

English (Kavanagh, 2002), further complicates the situation (De Klerk, 1999). In the light of the above, the urgent need for extensive research into this field is evident.

1.1.2 Problem statement and rationale for the study

Based on the preceding argument, the problem statement, the rationale for this study and the formulated research question follows below.

As stated earlier, research into phonological awareness is one of the most important contributors to learning and academic success (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995). For instance, research outcomes have shown that an improvement of phonological awareness skills will lead to an improvement in reading and spelling skills. This is congruent with evidence-based practice and ensures accountable, ethical and efficient service delivery to clients (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998).

Although valuable international research has been conducted regarding monolingual populations and their phonological awareness skills (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995), limited research has been done on the phonological awareness skills of learners who have to function in the multi-cultural, multi-lingual South African education context. This situation intensifies the specific clinical challenges, namely:

- A lack of national research into phonological awareness skills in learners in a multi-cultural, multi-lingual educational context;
- The importance of phonological awareness skills for academic success and the need for research in the South African context is under-emphasized.
- Insufficient knowledge regarding African first language learners' phonological awareness skills in English; this shortcoming needs to be rectified since English is these learners' language of learning and teaching, and the language in which they must attain academic success.

- Despite the contribution of previous local research conducted by Weinmann (2004), a very limited number of culture-specific and culture-sensitive instruments to asses these learners' phonological awareness skills, exist.
- The insufficient emphasis on the importance of phonological awareness skills by speech-language therapists during intervention with language impaired learners.

Based on these challenges, an thorough investigation into the phonological awareness skills of learners functioning in the education context described above, specifically in a the setting of a primary school in South Africa, is long overdue. In order to acquire an in-depth understanding of these learners' skills in ELoLT, their phonological awareness skills, phonological abilities, language abilities, reading abilities, and spelling skills need to be determined. By correlating and comparing the results obtained in the assessment of these abilities, the researcher will be able to describe the phonological awareness skills of the participants.

Against the background outlined above, the following research question was formulated: What is the status of the phonological awareness skills of a group of South African Grade 4-learners in a multi-cultural, multi-lingual education context where English is the Language of Learning and Teaching (ELoLT)?

1.2 RATIONALE FOR THE STUDY

"Look at the world of people, and you will be overwhelmed by what you see. But select from that mass a well-chosen few, and observe them with insight, and they will tell you more than all the multitudes together."

(Leedy & Ormrod, 2005:179)

Sufficient evidence exists to indicate the necessity of addressing phonological awareness skills as part of language-learning therapy (Bernthal & Bankson, 2004). Due to the shortcoming in literature on the phonological awareness skills of learners who are educated in a multi-cultural, multi-lingual education context, it is important to

conduct a descriptive study of this phenomenon. An in-depth description of this attribute of learners will lead to a better understanding of their phonological awareness skills, and will serve as basis for further research on this topic. The results of this study should lead to clinical and theoretical recommendations to improve the classroom situation for the ELoLT learner in the multi-cultural, multi-lingual South African context.

Currently, service delivery by the majority of speech-language therapists to these ELoLT learners is based on models that are valid for English first language learners. The results of the present study may provide insight into culturally and locally appropriate clinical applications, which may benefit many Black learners in South Africa being educated through the medium of English as Language of Learning and Teaching (ELoLT), hopefully leading to an improvement in these learners' literacy, academic, and future educational prospects.

1.3 OUTLINE OF CHAPTERS

Chapter	Content
1. Introduction and orientation to the phonological awareness skills of learners in the multi-cultural, multi-lingual South African education context	This chapter comprises the orientation and problem statement, the rationale for the study, the research question, the outline of the chapters and the definition of terms.
2. Factors impacting upon the phonological awareness skills of young learners in South Africa	This chapter serves as theoretical underpinning for the research project as it integrates relevant available literature findings within the field of phonological awareness of the learner (functioning in a multi-cultural, multi-lingual education context) internationally and within the South African context. The discussion focused on the current South African context, language related aspects in the teaching and learning process, phonological awareness skills, the educational context, and the role of the speech-language therapist in the South African context. The chapter provides an evaluation of these areas and limitations in current research and literature are highlighted.

Chapter	Content
3. Method	The research method is discussed in terms of the aims of the study, research design, ethical implications, population, sampling, materials and apparatus used during the research project, the procedures that were followed during the research project in terms of data recording, analysis, and processing of data.
4. Results and discussion of results	The collected and statistically processed data are presented in this chapter. The results obtained through the research protocol are discussed in accordance with the sub-aims of the research project.
5. Conclusion and recommendations	Based on the results obtained by the research protocol, and by referring to the previously cited theoretical underpinnings, conclusions are drawn, a critical evaluation of the study is presented, and ideas for future research are recommended.
6. References	A comprehensive and detailed list of all the sources of information referred to in this thesis.
7. Appendices	All the relevant documents pertaining to this study, but not included in the main text, is contained in this section.

1.3 TERMINOLOGY AND LIST OF ABBREVIATIONS

Terminology and abbreviations that were used in the current study are presented in 4.1 and 4.2 below.

1.4.1 Terminology

1.4.1.1 Phonological awareness

'Phonological awareness' refers to a component of meta-linguistics, which develops with language use on a higher cognitive level (Goldsworthy, 2001). It includes the knowledge that a word consists of smaller components that can be manipulated (McFadden, 1998). It also implies the understanding that words can be divided into sounds, syllables, and sub-syllabic units (Goldsworthy, 2001). This definition covers the components of phonological awareness comprehensively because it integrates

language and meta-linguistics, and therefore it was favoured over and above less comprehensive definitions.

1.4.1.2 Multi-lingual

Definitions provided by Broom (2004), Chick (2002) and Hough (2002) indicate that the term 'multi-lingual' applies where a person is competent in two or more languages (Broom, 2004; Chick, 2002; Hough, 2002). The participants in the current study were not necessarily multi-lingual, but they all functioned in a multi-lingual context, with daily exposure to more than one language.

1.4.1.3 Multi-cultural

Current texts on multi-culturalism lead to the preferred definition that the term 'multi-cultural' refers to contexts where people are exposed to a variety of cultures on a day-to-day basis (Broom, 2004; Chick, 2002; Hough, 2002). In other words, it reflects a quality of a society, not of an individual. The term 'multi-cultural' and its derivatives were often used in this study to describe the society that has become known as 'rainbow-nation' of South Africa, in which learners are exposed to a variety of cultures in the context of education.

1.4.1.4 Basic Interactive Communication Skills (BICS)

'Basic Interactive Communication Skills (BICS)' refers to a learner's informal conversational abilities and describes a universal and instinctive skill commonly associated with a learner's native language (Solarsh, 2002; Cummins, 2000; Cummins, 1996). Where Basic Interactive Communication Skills (BICS) are applied, the context provides cues to support meaningful conversations (Broom, 2004). This definition encapsulates the most important components of BICS, which is the reason for its selection.

1.4.1.5 Cognitive Academic Language Proficiency (CALP)

A learner's 'Cognitive Academic Language Proficiency (CALP)' refers to his/her ability to manipulate language in a situation where the context is not of primary consideration and can therefore be described as the ideational aspect of language (CALP) where the learner requires a higher level of language and the appropriate sense of using it (Solarsh, 2002). Cognitive Academic Language Proficiency (CALP) implies a reduced

number of cues, and gives rise to academic, de-contextualized language (Broom, 2004).

1.4.1.6 Black South African English (BSAE)

'Black South African English BSAE' generally refers to the variety of English commonly used by mother tongue speakers of South Africa's indigenous languages in areas where English is not the language of the majority (De Klerk, 1999).

1.4.1.7 English as Additional Language (EAL)

'English as Additional Language (EAL)' applies where English is not the speaker's mother tongue but is solely used as the speaker's additional language (Naudé, 2005). According to Naudé (2005) this term is used in education settings to describe the language status of the learners where English is the language of mutual understanding or language of learning and teaching. The use of this term gained popularity in the era after 1994 when an increasing number of learners are still being educated through the medium of English (Naudé, 2005).

1.4.1.8 English as Language of Learning and Teaching (ELoLT)

The expression 'English as Language of Learning and Teaching (LoLT)' is used when English is not the learner's mother tongue, but where it is the only language used in teaching and learning (Naudé, 2005; Broom, 2004).

1.4.2 List of abbreviations

Table 1.1 provides a list of abbreviations that were used in the current study

Table 1.1: List of abbreviations.

Abbreviation	Term
ELoLT	English as Language of Learning and Teaching
LoLT	Language of Learning and Teaching
BSAE	Black South African English
CALP	Cognitive Academic Language Proficiency
BICS	Basic Interactive Communication Skills

Abbreviation	Term
PA	Phonological Awareness
OBE	Outcomes Based Education
AAE	African American English
CELF	Clinical Evaluation of Language Functions (Semel & Wiig, 1980).
PhAB	The Phonological Awareness Battery (Frederickson, Reason & Frith, 1997).
ADHD	Attention Deficit Hyperactivity Disorder
dB	Decibels
Hz	Hertz
IPA	International Phonetic Alphabet
PV	Phonological Variation
P	Participant
ALF	African Language Family
EAL	English as Additional Language
MWT	Mann-Whitney Test
SCC	Spearman Correlation Coefficients

1.5 CONCLUSION

Post-apartheid education redressed racial segregation in South Africa and combined learners from different languages and cultures in a single multi-cultural, multi-lingual education system (Naudé, 2005). These learners face many problems arising from the fact that they are required to function in a context where the language of instruction (ELoLT) is not their first language. Against the background of severely limited literature on phonological awareness skills in multi-cultural, multi-lingual education contexts, and the importance of phonological awareness skills for academic success, the researcher emphasises the urgent need for research in the South African context. It is important to determine the phonological awareness skills in English of learners with an African language as first language, because English is their language of learning and teaching, and thus the medium through which they must attain academic success. Phonological awareness plays an important role in reading and spelling success, which forms a basis for a learner to be able to reach his/her full

academic potential. Through full realisation of his/her academic potential, the learner will be empowered to contribute more significantly to the overall development of society.

1.6 SUMMARY

In this chapter the need for research in the field of phonological awareness skills of learners functioning in a multi-cultural, multi-lingual education context were identified and described. The dearth in relevant literature (both nationally and internationally) led to the formulation of a problem statement and rationale for the study. The unique South African context emphasises the need for additional research to enable clinicians and researchers to understand the effect of this context on the phonological awareness skills of learners. Addressing this issue is of the utmost importance in order to inform clinical practice in Speech-Language Pathology in the South African context.

CHAPTER 2

FACTORS IMPACTING UPON THE PHONOLOGICAL AWARENESS SKILLS OF YOUNG LEARNERS IN SOUTH AFRICA

Chapter aim: This chapter serves as theoretical underpinning for the research project as it integrates available literature findings which are relevant within the field of phonological awareness of the multi-lingual learner both internationally and within the South African context. The discussion focuses on the current South African context, language related aspects in the teaching and learning process, phonological awareness, the educational context, and the role of the speech-language therapist in the South African context. These areas are critically evaluated and the shortcomings in current research and literature are highlighted.

2.1 INTRODUCTION

"Bilingualism or even multilingualism is a cultural and educational reality for children in many parts of the world."

(Muter & Diethelm, 2001:188)

In the academic development of children, the importance of skilfulness in all the components of language, including the higher meta-linguistic skill of phonological awareness, has long been recognized and stimulated research from different perspectives and in different fields of expertise (Larrivee & Catts, 1999; McFadden, 1998; Van Kleeck, Gillam & McFadden, 1998). Despite different perspectives of different professions, language remains an integral aspect of academic success. Where a learner's language skills and/or related skills such as auditory perception are not age-appropriate, specialised intervention is called for in order to improve the individual's inadequate skills to an age-appropriate level. The significant role of language skills and of the accompanying meta-linguistic skills in mastering reading and spelling emphasises the important input of the speech-language therapist in the intervention process (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998).

In many countries where English is used as Language of Learning and Teaching (LoLT), intervention addresses the importance of a well-established language structure for learning, because academic success depends in to a great extent on an adequate command of English (Owens, 2001). Since phonological awareness is an important component of overall language abilities, its importance in reading and spelling success cannot be ignored (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998). Poor phonological awareness may necessitate language intervention to enhance a learner's ability to cope in the learning situation (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995). A learner's reading and spelling skills may be negatively influenced by language skills that have not developed to a stage where they are age-appropriate; this may include underdeveloped phonological awareness which, in turn, may cause inadequate application of the meta-linguistic skills that are important for academic success (Goldsworthy, 2001).

Education becomes extremely complex in a multi-cultural, multi-lingual, society where often a single language (the one of mutual understanding) is used as the only language of learning and teaching. In South Africa, with its diversity of languages and cultures, the need for a language of mutual understanding is apparent – currently, English seems to be the choice for LoLT (Dawber & Jordaan, 2002; Mutasa, 2000; Naicker, 1999, Olivier, 1997). In the South African education system the majority of learners are expected to read and write in English which, in most cases, is not their first language.

To date, limited research has been conducted regarding the effect of English as Language of Learning and Teaching (ELoLT) on the phonological awareness of primary school learners in the multi-cultural, multilingual, context of South Africa. Research conducted on monolingual individuals indicated that a link existed between phonological awareness and later success in reading and spelling (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995). The above finding leads one to ask what the influence of language proficiency on phonological awareness may be in a multi-cultural and multi-lingual society where learners are exposed to various languages and cultures on a day-to-day basis.

In an attempt to gain more insight into the influence of language proficiency on phonological awareness and to provide a framework for discussion, the aspects presented in Figure 2.1 were identified as being relevant to the topic. As shown in Figure 2.1, five main areas of importance were identified. In addition, several components of each of these main areas were also identified to serve as guidelines for the discussion. Figure 2.1 is followed by a discussion of these areas and their identified components.

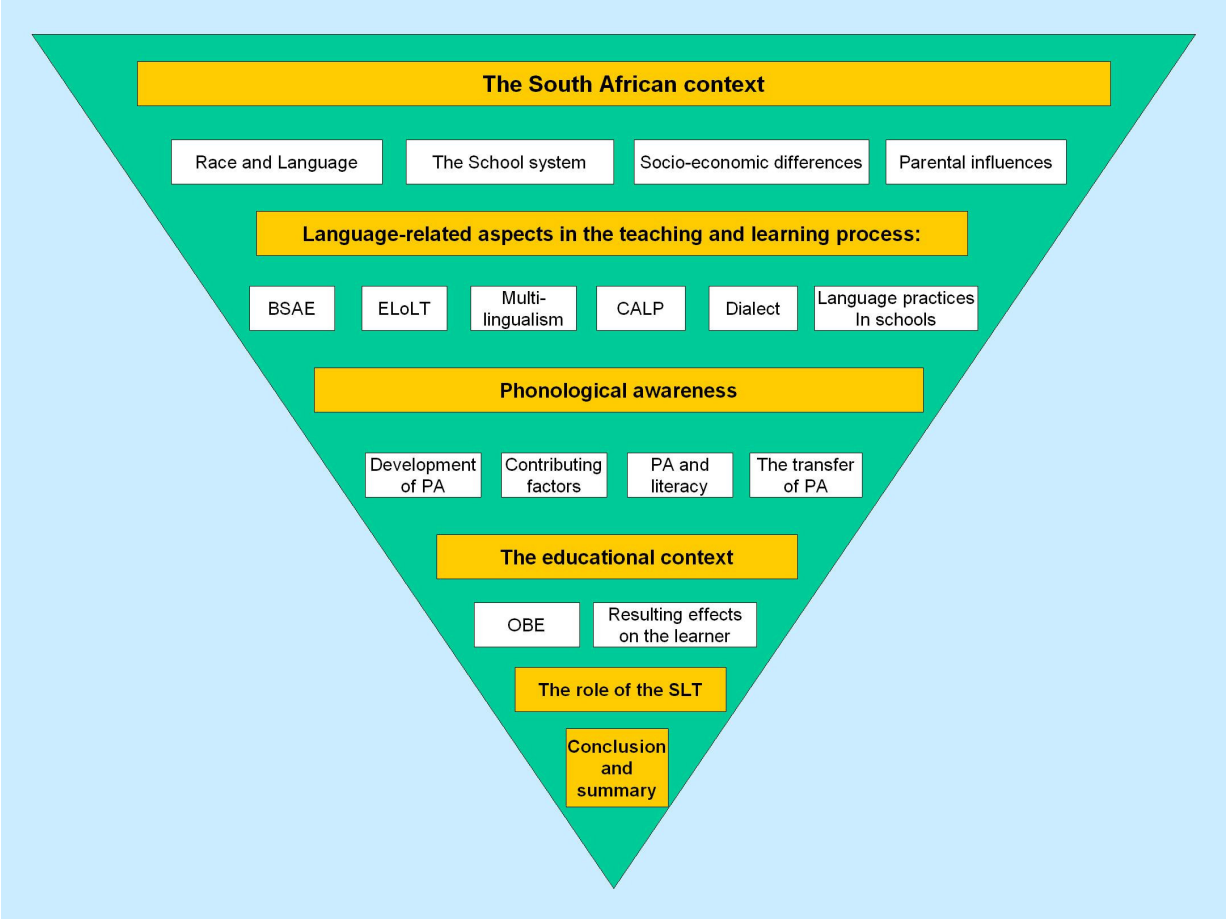


Figure 2.1: Outline of Chapter 2. *(Refer to chapter 1 for a key to the abbreviations)*

2.2 THE SOUTH AFRICAN CONTEXT

The diversity of cultures and languages in South Africa inspired Archbishop Desmond Tutu's familiar phrase *the rainbow nation* that so aptly describes the nation that came into being in this country in 1994; but it is precisely this diversity that calls for meaningful research in different fields to adequately cope with and function within this unique context. In the ensuing years the importance and urgency of purposeful

research in the field of the school education of learners of this rainbow nation became increasingly apparent (Seeff & Jordaan, 2000).

The South African population consists of four major racial groups: Asians, Blacks, Coloureds, and Whites. The language spectrum of this country covers the nine indigenous languages, namely isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Siswati, Tshivenda, and Xitsonga which, alongside English and Afrikaans, constitute the eleven official languages of South Africa (Broom, 2004; Chick, 2002; Mutasa, 2000). Table 2.1 shows the percentage and corresponding numbers of mother tongue speakers of each of the eleven official languages in South Africa (according to the 2001-census as cited on http://www.southafrica.info.htm). In addition to the standard forms of these languages, many variants are used by the different speakers of this wide variety of languages (Makalela, 2004; Kavanagh, 2002; Wissing, 2002; De Klerk, 1999).

Table 2.1: Percentages and corresponding numbers of mother tongue speakers of the eleven official South African languages (Census, 2001).

Language	% of population *(n=46.9 million)*	Speakers
isiZulu	23,8%	11 162 200
isiXhosa	17,6%	8 254 400
Afrikaans	13,3%	6 237 700
Sepedi	9,4%	4 408 600
English	8,2%	3 845 800
Setswana	8,2%	3 845 800
Sesotho	7,9%	3 705 100
isiNdebele	< 5%	1 360 100
Siswati	< 5%	1 360 100
Tshivenda	< 5%	1 360 100
Xitsonga	< 5%	1 360 100

Prior to 1994 this diversity in languages was part of the rationale for the segregation, in the school system, of children from the different population groups. The intention was (ostensibly) to promote each individual group's cultural heritage and customs by establishing schools aimed at each group's indigenous language and race (Chick, 2002). Idealistically, this scenario would have created a sense of belonging and pride in these children, but the contrary prevailed – opportunities were more readily available to the white (minority) group, with subsequent inferior facilities being created for the other population groups (Chick, 2002).

The end of the Apartheid era led to the abolishment of this segregated education system and it was replaced by a system aimed at integrating all language groups and cultures (Goduka & Swadener, 1999; Naicker, 1999; Olivier, 1997). However, this policy resulted in a system in which the vast majority of learners are expected to read and write in a language other than their mother tongue, which may have a negative impact on their academic performance (Seeff & Jordaan, 2000).

In this regard, it must be mentioned that seven of the eleven official languages recognised in South Africa and mentioned higher up, belong to two major language groups that show major differences in overall language structure. These groups and the languages belonging to each are shown in Table 2.2.

Table 2.2: The two main indigenous language groups of South Africa and the individual languages constituting each group (Broom, 2004).

Language group	Individual languages constituting the group
Nguni	IsiZulu, isiXhosa, siSwati, isiNdebele
Sotho	Setswana, Sepedi Sesotho

Tshivenda and Xitsonga are not included in Table 2.2 because it is customary to refer to them separately. It must be assumed that they both have their origin in the Niger-Congo group of languages, but their recent genealogy is not known. These two languages do not seem to be structurally related. It is, however, widely acknowledged that the nine indigenous official languages of South Africa have their origins in original Bantu. It is important to point out that these languages bear no resemblance

whatsoever to the large number of languages with the same origin as English (Le Roux, 2005).

Although government of the 'new South Africa' (post-1994) addressed the segregated school system, the socio-economic situation, where a huge discrepancy exists between the affluent communities on the one hand and the desperately poor on the other, is far more difficult to rectify (Broom, 2004). In the affluent group, parents can readily afford to expose their children to learning opportunities which allow them to develop to their fullest potential. In contrast, children in the poor communities, due to the financial status of their parents, are afforded minimum opportunities and consequently struggle and often cannot cope at school (Nancollis, Lawrie & Dodd, 2005; Christie, 1991). A large number of these learners receive their school education in a language other than their mother tongue with no additional support system in a multi-cultural and multi-lingual school environment. This situation presents major challenges in terms of academic success for these learners (Broom, 2004).

The crucially important parental support of these learners is negatively influenced by the legacy of apartheid. Many of the current generation of parents was subject to poor education and a resulting high dropout rate (partly due to inadequate facilities, and partly due to the struggle against apartheid with large scale and often extended boycotts of classes) (Christie, 1991). These parents' limited literacy proficiency in English puts a further constraint on learners' academic success (Broom, 2005; Cummins et al., 2005; Christie, 1991).

Factors such as race and culture, the school system, socio-economic factors, and parental influences (as illustrated in Figure 2.1) clearly do not enhance age-appropriate development of language abilities, part of which is meta-linguistic skills such as phonological awareness. The “rainbow”-reality of South Africa is nowhere more apparent than in the school context where it is endeavoured to integrate learners from diverse language and cultural backgrounds, different socio-economic groups, and with varying degrees of parental support in *one* educational system with *one* mutual language of understanding, namely English (Seeff & Jordaan, 2000). This leads to a situation where language – and specifically the LoLT – will doubtlessly have a negative influence on the teaching and learning process.

2.3 LANGUAGE RELATED ASPECTS IN THE TEACHING AND LEARNING PROCESS

In South Africa, South African English, a recognised standard according to the *South African Concise Oxford Dictionary* (Kavanagh, 2002) developed and became established in South Africa and is generally spoken by White South Africans with English as their mother tongue. Black South African English (BSAE) is as yet not a recognised English standard; it is however, a stark reality in the sense that it is spoken by millions of Black South Africans and is, in fact, the mutual language of understanding of this extremely diverse population (Makalela, 2004; Kavanagh, 2002; Wissing, 2002; De Klerk, 1999; Wright, 1996). According to Kavanagh (2002), BSAE is a simplified variety (not necessarily dialectical) of South African English containing typical South African words and phrases. Words from various African languages, which more accurately express concepts and ideas comprehensibly to Black South Africans, are assimilated into BSAE (Kavanagh, 2002). According to De Klerk (1999) speakers of BSAE are characterized by striking differences in competence, ranging from complete fluency to minimal levels of proficiency. It is probably due to this variety within BSAE, that a BSAE standard does not exist (Makalela, 2004). This has implications for analysis of English competency of the speakers of BSAE, and complicates research in this field.

Although it is, at this stage, not certain if BSAE is a true dialect, the variety within BSAE can best be explained in terms of dialectical variations. Dialects are mutually intelligible forms of a language that can be associated with a particular region, class and ethnicity (Goldstein & Iglesias, 2004). A dialect can be described in terms of degree of variation where the same set of peculiar features of pronunciation appears in more or less prominent forms (Owens, 2001; Lanham, 1984; Lanham, 1967). The American Speech-Language-Hearing Association (ASHA, 2005), states that dialectical variety in African American English (AAE) should not be classified as a disordered or pathological form of speech, thereby pointing out the importance of distinguishing between language difference and language pathology (ASHA, 2005). This statement refers to AAE, but indigenized varieties of English exist internationally, and therefore ASHA's statement (2003) referred to above, may be generalized to include BSAE.

Dialectical variations naturally include the prosodic (supra-segmental) characteristics of a specific language which includes patterns of stress (which determine rhythm), and intonation. Stress causes some syllables to be perceived as less or more prominent than others syllables, due to the fact that it occurs in degrees. It is an extremely complex component of speech and is, in most cases, language specific (Tesner 2005; Abercrombie, 1991). The stress pattern of the first language is often superimposed on a second or third language and these influences are part of that which is often wrongly described as 'accent' (as in *She speaks English with a German accent*). The phenomenon commonly referred to as 'accent' is an extremely complex one, involving most of the segmental and supra-segmental features of language. Taking this into account, speaking a second or third language with the stress pattern (or any of the other parameters) of the mother tongue cannot be ascribed to impeded language proficiency.

Despite the fact that the majority of learners in the majority of public schools in South Africa are proficient in BSAE, the current language of learning and teaching is the South African English standard (Broom, 2004, Van der Walt & Van Rooy, 2002). Possible explanations for this vary from local political connotations to the international status of English. Approximately one quarter of the world's population uses English as first, second or foreign language (De Klerk, 1999) and it is regarded by many African language speakers as the key to socio-economic advancement and power (De Klerk, 1999). Furthermore, due to the era of apartheid, Afrikaans is still viewed as the language of the oppressor (Broom, 2004; Hough, 2002), and many speakers of African languages are of the opinion that African languages seem to have nothing to offer except social interaction and communication between African speaking conversation partners, and therefore most parents choose schools in which English is the medium of instruction (Mutasa, 2002, De Klerk, 1999). These and other reasons for preferring for English as the LoLT do, however, not fall within the scope of this study and will not be further explored.

According to Dawber and Jordaan (2002), the child's language development commences with the communication of his/her basic needs. This early language development is of utmost importance, as it enables the child to think about and experience the world around him/her, expressing emotions and expanded needs

(Dawber & Jordaan, 2002). By the time the child enters the formal education environment, language is required to have developed to a level of awareness of language (meta-linguistic skills) that allows for commencement of reading and spelling skills (Dawber & Jordaan, 2002). Ideally, the child would have acquired language in the six years preceding school entry to ensure the use of language for purposes of learning (Dawber & Jordaan, 2002). In the South African context, the language acquired in the six years preceding formal schooling is very often one of the African languages. The mother tongue is ideally the preferred LoLT, but the majority of public schools only use African languages as medium of instruction in the foundation phase (Broom, 2004; Chick, 2002). Despite the fact that the majority of children would have been exposed to an African language as first language, many parents want their children to attend a school where the sole medium of instruction is English, resulting in these children starting their formal education with English as LoLT (Broom, 2004). The dilemma in school education in South Africa is that the majority of learners are predominantly exposed to their mother tongue in their formative (pre-school) years and English as mutual language of understanding is usually only introduced when the learner enters the formal school environment. Being able to express their basic and expanded needs in their mother tongue, learners enter the educational environment with a limited knowledge of the language of instruction which, is as explained above, more often than not English.

The situation is further complicated when, as is often the case in South Africa, an educational environment exists where the learner (whose mother tongue is not English), is taught by a teacher (facilitator) whose mother tongue is not English either (and often also not the same as that of the learner). Thus, both learner and teacher have to communicate with each other, think, read and spell in a language which is not the mother tongue of either (De Klerk, 2002). To further complicate the issue, learners starting their school education in a multi-lingual society may have varying degrees of proficiency in the LoLT (Broom, 2004).

Research has shown that a second language learner may take up to 5 years to develop to the same level of academic language proficiency as a first language speaker (Dawber & Jordaan, 2002; Mutasa, 2000). Clearly, this delay in the

acquisition of a second language will have an adverse effect on the individual's academic performance in that language.

The development of language skills in the multi-lingual individual can be explained by the *Iceberg Analogy of Bilingualism* (Baker, 1996). This analogy explains that the learner will use a common underlying proficiency system for all the languages that he/she is required to learn. This requires solid first language grounding before a second one can be introduced (Dawber & Jordaan, 2002). The implication is that the learner should have a well founded language base in either an African language or English as a first language. In reality this ideal is often not met and the child cannot be considered a proficient language speaker because of a poor language grounding (in either the African language or in English). Information will be available on the learner's LoLT but often little or no knowledge exists about the learner's first language development and proficiency.

A common occurrence in schools is that the class often consists of learners from different language groups. In addition, learners often find themselves in a class where the teacher teaches in his/her second language (Mutasa, 2000; Martin, 1997). The situation becomes even more complex when one considers that the school system use English as the LoLT, irrespective of the learners' first language basis (Dawber & Jordaan, 2002).

Where the learner's first language is any one of the African languages, major structural linguistic differences between these languages and English exist (Noble, 2002). Whilst English is of European origin, the indigenous languages in South Africa have their origin in Africa. Mutasa (2000) describes the African languages as being in their infant stage of development with regard to technical terminology, whereas English is renowned for being a language with a tradition of scientific and technical literature. The influence of the totally different grammatical and morphological structures of the indigenous African languages may add to a lower proficiency level regarding language skills in English, and subsequently to poor application of the higher meta-linguistic skills required for reading and writing. As the semantic system of the African languages differs from the semantic system of English, these structures are strongly resistant to instruction (Le Roux, 2005; Ayoun, 2004; Ishida, 2004).

Overall linguistic structure also plays an important role in meta-linguistics, which may have a negative influence on the Cognitive Academic Language Proficiency (CALP) of the learner with an African language as first language (Noble, 2002). The developmental process from Basic Interactive Communication Skills (BICS) towards CALP is also dependent on appropriate environmental stimulation (Cummins, 1985).

The learner's ability to manipulate language in a situation where the context is not considered can be described as the ideational aspect of language where the learner requires a higher level of language and sense of how to use it (Solarsh, 2002). When BICS is compared to CALP, major discrepancies are observed since BICS can be described as a universal and instinctive skill commonly associated with a learner's native language, whilst CALP implies higher meta-linguistic development (Broom, 2004; Dawber & Jordaan, 2002; Solarsh, 2002; Cummins, 2000; Cummins, 1996).

Ideally, the learner's English will develop to a level where the learner will have CALP, and will be able to cope with de-contextualised language in learning and teaching (Broom, 2004; Dawber & Jordaan, 2002; Solarsh, 2002; Cummins, 2000; Cummins, 1996). The problem many second language learners face in the classroom with ELoLT is that he/she quickly develops the ability to communicate in English on an interpersonal level, but the acquisition of CALP needs a protracted period of exposure (Broom, 2004; Dawber & Jordaan, 2002). The learners' ability to attain his/her maximum academic potential depends heavily on their meta-linguistic language skills in the LoLT. English as LoLT may have a negative impact on the learner's phonological awareness skills with resultant poor reading and spelling skills and inadequate language proficiency (Muter & Diethelm, 2001; Majsterek & Ellenwood, 1995; Torgeson & Wagner, 1994). Phonological awareness, viewed as an under-pinning of CALP, may be influenced by the differences in structure of the LoLT and the specific structure of each different first language.

The severity of the effect that BSAE, dialect, ELoLT, CALP, and the language practices in schools have on the language skills of learners from diverse language and cultural backgrounds (Figure 2.1) cannot be underestimated. These factors may not only adversely affect teaching and learning process, but may result in language skills

that are way below average and also in poor meta-linguistic skills, including inadequate phonological awareness.

2.4. PHONOLOGICAL AWARENESS SKILLS

Goldsworthy's (2001) definition of phonological awareness was adopted because, in the consulted literature, it provided the most lucid explanation of this meta-linguistic ability. The definition states that phonological awareness is a component of meta-linguistics, which develops due to the higher cognitive level of language use (Goldsworthy, 2001). It is the knowledge that a word consists of smaller components that can be manipulated (McFadden, 1998). This leads to an understanding that words can be divided into sounds, syllables, and syllables-onset, -peaks, and -codas (Goldsworthy, 2001). Phonological awareness develops from as young as three years of age, when the child is exposed to rhyme, alliteration and stories (Roth & Baden, 2001). The learner's foundation of phonological awareness is an essential and powerful tool when embarking on the introduction to reading and spelling at the entrance level to formal schooling (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, McFadden, 1998).

Phonological awareness has a prominent function in learning because of its impact on reading and spelling (Van Kleeck et al., 1998; Larrivee & Catts, 1999; Hodson, 1998). One of the aims of school education is to develop an individual's linguistic proficiency and within the Outcomes Based Education (OBE) system it is important to note that the foundation phase (Grades 1 – 3) is the most important phase in the development of reading. During these three years the development of the learner's reading decoding ability is established. After this period, the readers should be able to 'read' (decode), and reading as a language and information-processing skill is taken for granted; the assumption is that once the learners have learned to decode the words, they will be able to make sense of what they are reading. This however, is a dangerous assumption, since reading comprehension does not necessarily develop automatically for all readers (Pretorius, 2002).

The most recent research perspective on reading and spelling success focuses on the early development of phonological awareness (Hogan, Catts, & Little, 2005; Roth & Baden, 2001). Focus in research currently falls on the enhancement of phonological awareness skills at a young age. Research has already shown that the better the phonological skills are, the better the reading performance is (Hogan, Catts, & Little, 2005; Roth & Baden, 2001). Enhancing phonological skills is looked upon as a preventative measure that minimises the occurrence of reading and spelling problems (Muter & Diethelm, 2001; Larrivee & Catts 1999).

Although comprehensive research has been conducted regarding phonological awareness and its importance in the development of early reading and writing skills, the bulk of this research was conducted on monolingual populations (Goldsworthy, 2001). Currently, limited research data is available on the acquisition of phonological awareness in bi- or multilingual societies as is found South Africa, this leaving speech-language therapists and teachers with few guidelines when working with these populations in the South African context.

The sequence of development of phonological awareness is often different for each language (Noble, 2002). Noble (2002) conducted a study on a limited sample in a Zulu-population and concluded that a difference exists in the sequence of development of phonological awareness skills in second language English learners as alliteration developed before rhyme in the subjects studied, compared with British Standard English speakers where rhyme developed before alliteration.

Phonological awareness is influenced by both the receptive and expressive language skills of the child as these skills can be seen as the point of departure from where phonological awareness will develop (Goldsworthy, 2001). It is important to note that, if a child's language acquisition is not at an age-appropriate level, his/her phonological awareness skills will most probably not be on that level either, because phonological awareness forms a major part of the meta-linguistic component of language (Goldsworthy, 2001). Factors contributing to language acquisition may therefore play an important role in the development of phonological awareness as well (Roth & Baden, 2001).

Normal development of phonological awareness is important, as this is one of the primary determiners of subsequent reading and spelling success. Extensive research has been conducted to determine the influence of phonological awareness on reading and spelling success (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck et al., 1998). Reading and spelling success was found to be directly linked to the learner's phonological awareness (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck et al., 1998). Research has shown unequivocally that phonological awareness is the single most important precursor of spelling and reading success (Roth & Baden, 2001; Larrivee & Catts, 1999; Hodson, 1998).

Paucity in knowledge about phonological awareness skills of African language speakers can be ascribed to the limited amount of research that has been conducted in this field. Reality requires these learners to be on an advanced level of phonological awareness in the language of instruction – irrespective of their first language (Noble, 2002). English as LoLT is, more often than not, these learners' second or even third language. Phonological awareness must therefore be transferred or rather shifted to their second or third language.

Controversy exists regarding whether a child's phonological awareness skills in his/her mother tongue can be used (or expanded upon) to achieve the same (or a better) degree of skills in the language that is used as LoLT (Holm & Dodd, 1996). Currently three opinions are expressed in the literature: Firstly, that phonological awareness occurs cross-linguistically (Holm & Dodd, 1996). The hypothesis was formulated that individuals learning a second or third language will transfer their literacy processing skills from their first language to their second or third (Holm & Dodd, 1996). Secondly, the opinion was voiced that cross-language transfer to a second or third language will only occur in skills that are still in development in the first language (Cisero & Royer, 1995). In the third instance, Bialystok and Herman (1999) are of the opinion that research cannot at present prove beyond doubt that phonological awareness skills are transferred from the first language to second or third (Bialystok & Herman, 1999). Due to a lack in research and disagreement between researchers, guidelines for intervention with children from diverse language and culture groups in the same education system are limited and based on knowledge gained from research involving monolinguals.

Development of phonological awareness, factors contributing to its development, its important role in literacy, and the controversy regarding transfer of phonological awareness from one language to another (as illustrated in Figure 2.1) have significant implications for the educational context and pose challenges to learners from diverse language and cultural backgrounds, but all with English as the LoLT.

2.5 EDUCATIONAL CONTEXT

A paradigm shift was made in the South African educational system from a content-based curriculum to an outcomes based education (OBE) curriculum. OBE was introduced in South Africa to level the playing field in a multi-cultural and multi-lingual society (Naicker, 1999). This implies that the focus falls on the organization of what is essential for all learners to succeed at the termination of a learning experience (Gultig, Lubisi, Parker & Wedekind, 1998). This would ensure that the learner will be equipped with the necessary knowledge, competencies and qualities needed for success after having left the school education system (Gultig et al., 1998).

The previous content-based curriculum was content and time driven, in contrast to the current OBE curriculum which is learner and achievement driven (Olivier, 1997). Table 2.3 illustrates the differences between the content based curriculum and the OBE system (Olivier, 1997:15).

Table 2.3: Differences between the content based curriculum and the current OBE approach to education (Olivier, 1997:15).

Content based curriculum	OBE approach
a) Rote learning b) Syllabus is content driven and broken down into subjects c) Textbook / worksheet bound d) Teacher centred e) Syllabi are rigid and non-negotiable f) Emphasis on what teacher hopes to achieve g) Curriculum development process not open to public input	a) Critical thinking, reasoning b) Learning is process and outcome driven, connected to real life situations c) Learner and outcome centred d) Teacher is facilitator e) Learning programmes are seen as guides f) Emphasis on outcomes – what learner achieves g) Wider community involvement is encouraged

It is important to note that the new educational system is inseparable from the community's understanding of and involvement in the system (Gultig et al., 1998). The OBE curriculum consists of General and Further Education and Training bands (Gultig et al., 1998). The General Education and Training band is subdivided into three conceptual school phases, namely the foundation phase (reception year to grade 3), the intermediate phase (grades 4 to 6), and the senior phase (grades 7 to 9) (Gultig et al., 1998). In the OBE system the application focuses on different levels of learning and each learner determines his/her own pace. It is imperative for learners to achieve the outcomes as stipulated for each phase (Olivier, 1997). Unfortunately, the majority of learners in the new OBE system probably come from backgrounds where parents are not able to fulfil their educational role because they cannot provide significant input, with the result that the development of higher meta-cognitive skills is not enhanced (Christie, 1991).

It is in the intermediate phase where learners are required to begin to understand detailed relationships between materials, incidents, circumstances and people. In this phase they must be able to infer the consequences of such relationships (Gultig et al., 1998). At the level of grade 4 it is assumed that phonological awareness skills are on a level where they will enhance reading and spelling skills (Broom, 2004; Muter & Diethelm, 2001; Majsterek & Ellenwood, 1995; Torgensen & Wagner, 1994).

These learners are required to learn to read and write in a system that is outcomes-driven, in a multi-cultural and multi-lingual society, and without the necessary support from the community (Dawber & Jordaan, 2002; Christie, 1991). It is clear that a learner with poor pre-literacy skills will face enormous problems and will, in all likelihood, not thrive in the system just described. The large number of learners in higher grades that are not able to read or spell on an age-appropriate level bears evidence of this statement (Pijper, 2004).

The current educational system intends to take the learner to a higher level of meta-cognitive thinking (Olivier, 1997), but it is not optimally equipped to accommodate all the country's sub-cultures. Despite the fact that learners from various cultures and language groups are housed in one class, only English is used as language of

learning and teaching in English mainstream schools. Individual cultures and customs are mostly not catered for (Cummins et al., 2005).

Ideally, provision should be made for culturally and contextually relevant education since a learner cannot be expected to participate, compete or learn effectively in a language in which he/she is not fully proficient and literate (Cummins et al., 2005; Mutasa, 2002). At present this ideal is not feasible and is as yet an unattainable prospect (Louw, as cited in Eloff & Ebersöhn, 2004).

According to Goldstein (2000), the possible mismatch of the learner-teacher relationship, due to different linguistic and cultural experiences, may have a negative influence on the learners' academic achievement. Teachers may contribute to a culture of learning by acknowledging the value of the learners' home language and cultural heritage (Goldstein, 2000).

Another factor which may contribute to the differences in the communication skills of learners may be the Afrikaans- and African-speaking teachers that are using English as LoLT in the classrooms of mainstream English schools (Du Plessis, 2005; Broom, 2004), because they are providing instruction in a language that is not their first (Van der Walt & Van Rooy, 2002, Cummins et al., 2005). The teachers' proficiency in the language of instruction and their exposure to this language outside the classroom are considered important factors in the instruction of a second or third language, and may thus influence the stimulation provided to learners in the classroom situation (Alexander, 1999).

As is clear from Figure 2.1 and from the discussion of the OBE system, the effect of this system on learners in a multi-cultural and multi-lingual, society is that they are confronted with numerous challenges on the level of reading and spelling skills, which should be addressed by a team of professionals in which a speech-language therapist would play an important role.

2.6 THE ROLE OF THE SPEECH-LANGUAGE THERAPIST

In an effort to create a nurturing learning environment, a call has been made for the provision of intervention practices that have proven to be effective (Van Kleeck et al., 1998). The responsibility to provide conclusive proof of the effectiveness of speech-language therapy falls on the speech-language therapist (Van Kleeck et al., 1998). Overwhelming evidence exists that, where a learner's phonological awareness skills improve, the learner's reading and spelling success also improves, leading to an overall improvement in general academic achievement in school (Larrivee & Catts, 1999; Roth & Baden, 2001; van Kleeck et al., 1998). It is the ethical responsibility of the speech-language therapist to address these contexts and to assist in creating optimal learning situations.

Service delivery in the form of a multi-disciplinary team approach is important in the assessment and intervention of phonological awareness skills (Weinmann, 2004; Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck, Gillam & McFadden; 1998; Majsterek & Ellenwood, 1995). Ideally, the team should consist of teachers, remedial teachers, parents, and a speech-language therapist as core-members. This core team should collaborate to achieve the ultimate goal of ensuring reading and writing success by improving the phonological awareness skills of these learners. As the team member with an understanding and knowledge of phonological awareness, the speech-language therapist is an important role-player in the multi-disciplinary team that aims to address the problem of inadequate phonological awareness (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck, Gillam & McFadden; 1998; Majsterek & Ellenwood, 1995). The speech-language therapist's responsibility clearly lies in close *collaboration* with teachers, *assessment* and *intervention,* and, where possible, *prevention* of reading and spelling problems (Roth & Baden, 2001). These roles of the speech-language therapist are illustrated in Figure 2.2.

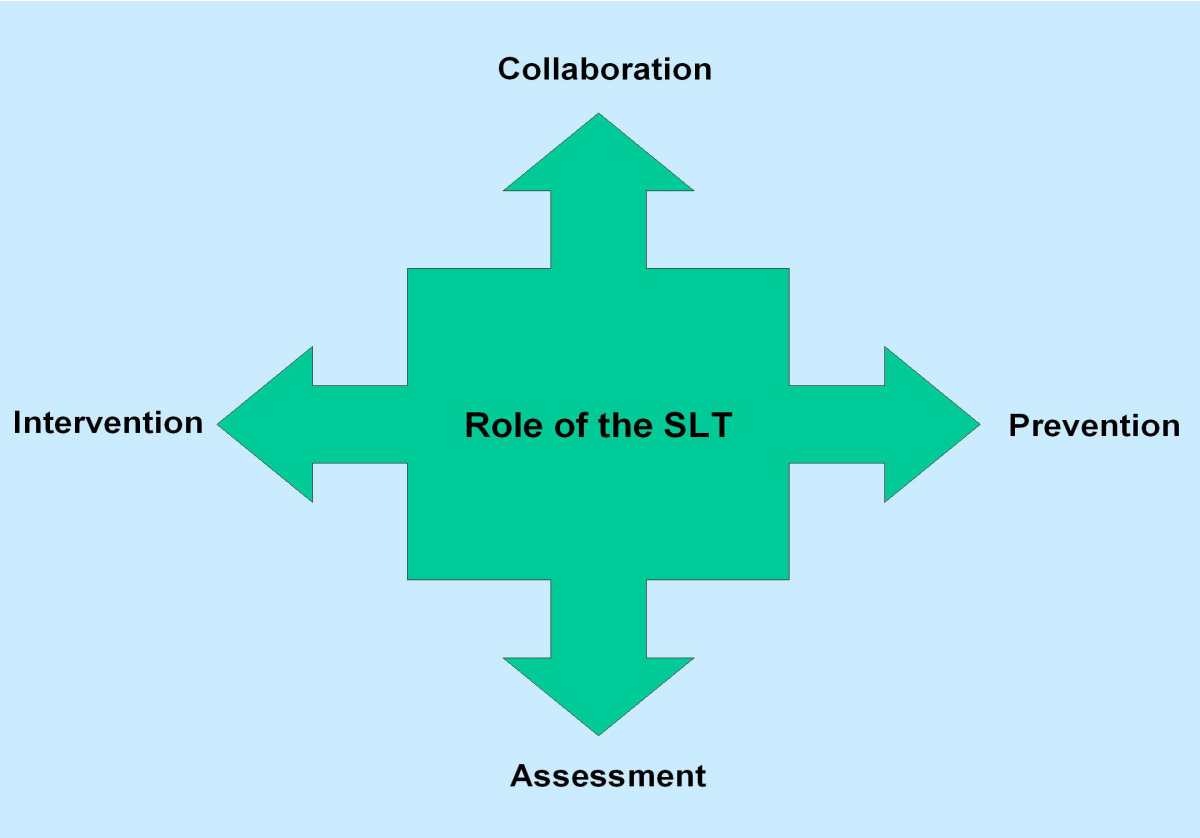


Figure 2.2: The role of the speech language therapist as an important member of the multi-disciplinary team that focuses on phonological awareness (Based on Roth & Baden, 2001).

The success of the *collaboration* between the speech-language therapist and teachers depends on the understanding of phonological awareness by the teachers and its pivotal role in reading and spelling (ASHA, 2001). Stoop (2002) found that the majority of teachers in Gauteng do not understand the term phonological awareness (Stoop, 2002). Many teachers may therefore not be able to apply the necessary educational principles for development of these skills in the classroom environment. Few teachers currently have the ability to integrate the unique requirements of learners in each group or class (Stoop, 2003). The present education system often results in a large number of learners in each class, further limiting individual attention to each learner. Access to the services of speech-language therapists in South Africa is limited and Stoop (2003) found that few teachers in Pretoria were even aware that the speech-language therapist can assist them in the development of programmes to enhance phonological awareness skills in the classroom setting (Noble, 2002; Stoop, 2003; Haarhof, 2001). Collaboration between teachers and speech-language

therapists is probably not optimal as far as phonological awareness skills within the multi-lingual context are concerned (Stoop, 2003; Noble, 2002; Haarhoff 2001).

Limited *prevention* of spelling and reading failure is currently a common occurrence in South Africa. This may be attributed to many different factors such as the limited number of speech-language therapists employed in public schools to assist in empowering teachers to know when to refer a learner, the lack of research on phonological awareness in the multi-cultural and multi-linguistic society of black learners in South Africa with English as LoLT, the controversy in international literature regarding phonological awareness and its transfer to an additional language, and the disparity in available resources aimed specifically at black learners (Holm & Dodd, 1996; Cisero & Royer, 1995; Bialystok & Herman, 1999).

If the prevention process in learners at risk for developing reading and spelling disorders in diverse population of South Africa does not meet its goals, *assessment* will become a necessity for the speech-language therapist before effective intervention can take place.

Assessment of the learners in question poses another major challenge to the speech-language therapist, as it can rarely take place in the learner's first language – most often assessment takes place in either English or Afrikaans. According to Weinmann (2004) this leads to a situation where the speech-language therapist in South Africa assesses the phonological awareness skills of these learners with tools that are totally inappropriate in terms of their culture and language (Weinmann, 2004). The tools presently available in South Africa were mostly developed within the American and British contexts and no adjustments were made for accommodating all individuals of the African population (Bland-Steward, 2005; Pijper, 2004). An urgent need exists for the development of culturally and linguistically relevant assessment tools for phonological awareness skills of Black learners of South Africa.

Assessment will provide the guidelines for *intervention*. In intervention there is an equally urgent need for speech-language therapists that can provide *intervention* in Black children's first language. At present, speech-language therapists have no choice other than to work on phonological awareness skills in the LoLT, and are mostly unable to assess whether the learner's language acquisition of his/her first language is completed. Intervention may be ineffective if a child has no language base upon which he/she can build his/her meta-linguistic phonological awareness skills. In South Africa few African-language speaking speech-language therapists are available – a serious shortcoming in the profession of Communication Pathology.

It is clear that the role of the speech-language therapist, namely collaboration, prevention, assessment, and intervention (as illustrated in Figure 2.2) within the multi-cultural and multi-lingual educational context pose major challenges. The importance of the role of the speech-language therapist as a team member cannot be overestimated.

2.7 CONCLUSION

Learners from backgrounds other than Afrikaans or English who are not proficient in either of these languages face enormous challenges in the South African educational system. Different races and cultures within the school system as well as socio-economic and parental influences do not provide an optimal learning environment. The learning environment is, in all probability, not conducive to the development of higher meta-linguistic skills such as phonological awareness. This situation is complicated by the effect of BSAE, dialect, ELoLT, CALP, diverse language backgrounds, and language practices in schools on the development of phonological awareness. Factors contributing to the development of phonological awareness skills, its important role in literacy, and the controversy regarding transfer of phonological awareness from one language to another language, have implications for the educational context, and pose major challenges to these learners when English is the LoLT.

Furthermore, the learners in question must function within the OBE system, which challenges them on the level of reading and spelling skills. This challenge should be addressed by a team of professionals in which a speech-language therapist plays an important role – the importance of such collaboration in prevention, assessment and intervention cannot be overemphasized.

2.8 SUMMARY

Chapter 2 addressed the phonological awareness skills of learners within the multi-cultural and multi-lingual, South African context. A review of the South African context, language-related aspects in the teaching and learning process, phonological awareness skills, the educational context and the role of the SLT was presented with the South African learner in mind. It serves as theoretical underpinning for the research and strives to draw correlations between the opinions expressed in the literature on phonological awareness.

The overview of relevant literature not only strengthens the rationale for the study, but provides a motivation for the need for immediate and urgent research in the field of phonological awareness in the South African school context. By addressing this issue the speech-language therapist will not only comply with the professional roles as proposed by the Health Professions Council of South Africa (HPCSA, 2005), but will facilitate the creation of a supportive learning environment and ultimately be an effective and ethical clinician.

CHAPTER 3

METHOD

Chapter aims: The aims of this chapter is to discuss the method that was followed in the research process in terms of the aims of the study, research design, ethical implications, population and sampling, materials and apparatus used during the research project, the procedures that were followed, the data recording, and the analysis and processing of data.

3.1 INTRODUCTION

"To answer some research questions, we cannot skim across the surface. We must dig deep to get a complete understanding of the phenomenon we are studying."

(Leedy & Ormrod, 2004:133)

Through research professional practitioners such as speech-language therapists formulate scientifically founded theories about salient phenomena as they occur in day-to-day practice and endeavour to shed light on phenomena that heretofore remained unexplained. These efforts may lead to generalizations and applications of newly acquired knowledge in intervention and treatment which may reflect effective, evidence-based practice (De Vos et al., 2005). Worthwhile, relevant research is at all times conducted in a formal, accountable manner, where the aims of the study, the research design, ethical implications, population and sampling, materials and apparatus used during the research project, the procedures that were followed during the research project, and the data recording, and analysis and processing of the data are clearly set out (Leedy & Ormrod, 2004).

Due to a shortfall in the knowledge base which focuses on the phonological awareness skills of children in the multi-lingual context of South Africa, there is an urgent need for formal research that will lead to a better understanding of the challenges faced by this unique population of young learners.

The main research and sub-aims that were formulated for this study are set out in 3.2 below.

3.2 RESEARCH AIMS

The main aim of this study was to explore the effect of a multi-cultural and multi-lingual education context on the English phonological awareness skills of a group of Black Grade 4-learners in a mainstream primary school setting in South Africa.

In order to realize the main aim the following *sub-aims* were formulated:

- To determine the participants' phonological ability in English as LoLT by using the Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986).
- To determine the participants' expressive and receptive language abilities in English as LoLT by using the Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980).
- To determine the participants' phonological awareness skills in English as LoLT by using The Phonological Awareness Battery (PhAB) (Frederickson, Reason & Frith, 1997).
- To determine the participants' level of reading ability in English as LoLT by using informal tests designed by the researcher.
- To determine the participants' level of spelling ability in English as LoLT by using an informal test designed by the researcher.
- To determine the relationship between the participants' phonological abilities, language abilities, reading abilities, spelling abilities and phonological awareness skills by comparing the results of all the tests mentioned above.

3.3 RESEARCH DESIGN

The research design followed a *quantitative* and *qualitative* paradigm that was *exploratory, descriptive* and *contextual* in nature (Leedy & Ormrod, 2004; Mouton, 2004; Struwig & Stead; 2002).

A combination of the *quantitative* and *qualitative approaches* was used to enable the researcher to describe the results obtained. Combinations of research methods have the potential of minimizing the chance of bias, and thus maximizing the quality of data collected (Berg, 1998). Triangulation was implemented because a combination of approaches was used to answer the research question. Through triangulation the

researcher could bring together the data collected from the multiple sources that were drawn upon to support the final analysis of the results (Leedy & Ormrod, 2004; De Vos, 1998).

A *qualitative approach* was used to create a better understanding of the phenomenon of phonological awareness in a specific *context* (Leedy & Ormrod, 2004). According to Peshkin (1988) qualitative research enables the researcher to describe, interpret, verify, and evaluate collected information. This method enabled this researcher to gain a new understanding of the phonological awareness skills of Black grade 4-learners in a multi-lingual school context with English as LoLT, by describing, interpreting, verifying, and evaluating the obtained data.

The *quantitative approach* used in this study enabled the researcher "....to answer questions about relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena" (Leedy & Ormrod, 2004:94). The standardized tests and the tests devised by the researcher made it possible to determine certain relationships between the measured variables, thereby enabling the researcher to provide information regarding the phenomenon of phonological awareness in Black learners specifically.

Firstly, the method was exploratory in nature, aiming to explore a phenomenon about which little knowledge exists, namely the phonological awareness skills of Black learners in a multi-lingual primary school setting with English as Language of Learning and Teaching (ELoLT). The methods used in exploratory research may include surveys, literature reviews, and interpretations that may lead to a better understanding of the phenomenon (Struwig & Stead, 2002). In terms of exploratory research, this study included a review of literature on phonological awareness as well as a questionnaire that was directed at parents as part of the broader research design.

Secondly, the nature of this study was descriptive. Through using a descriptive approach, an in-depth description of an identified group of Grade 4 learners' phonological awareness skills was made possible (Mouton, 2004). The research protocol comprised a questionnaire survey directed at parents, an audiological screening test, a formal test battery which consisted of an articulation test, a test for

expressive and receptive language, a test of phonological awareness, as well as tests for reading decoding and comprehension, and spelling tests. The results of these tests, considered holistically, enabled the researcher to render a detailed description of the participants' phonological awareness skills regarding English.

Thirdly, the study was contextual. The context in which this study was conducted is representative of the Outcome Based Educational (OBE) system currently followed in South Africa. The selected school is an educational institution with 1200 black learners from grade 0 to 12, where the entire curriculum is presented in English and where the majority of teachers are White, with Afrikaans as their first language.

In the light of the above, this study could be successfully conducted by using a research design that is a quantitative and qualitative paradigm that is exploratory, descriptive and contextual in nature (Leedy & Ormrod, 2004; Mouton, 2004; Struwig & Stead; 2002).

3.4 ETHICAL IMPLICATIONS

When research is conducted where human beings are the main focus of investigation, there are specific ethical implications that the researcher must bear in mind before starting the research (Louw, 2004; Leedy & Ormrod, 2004).

The following ethical norms and rules, derived from ethical principles (Louw, 2004) were applied in the planning and execution of the research project:

- **Respect for persons**

All parents and participants were informed of the nature of the study before they were requested to grant consent to participate in the study. Participation was voluntary, and they had the right to withdraw at any stage during the study (Leedy & Ormrod, 2004). Letters of informed consent, describing the voluntary nature of the study, the purpose and procedures of the study, and participant's rights (Appendices B and C) were handed to the principal of the school, and also to the parents of the participants (Maxwell & Satake, 1997).

As the participants were minors, consent to participate was obtained from them after a verbal explanation followed by a letter written on an age-appropriate level. The participants were also free to withdraw from the study at any time (Appendix D). The participants' right to privacy was respected at all times. Numbers were assigned to each participant, ensuring privacy and anonymity regarding scores on tests, information obtained by means of the questionnaire for parents (Appendix E), and the information used in the research report. Confidentiality was maintained throughout (Leedy & Ormrod, 2004).

Information was reported honestly and comprehensively throughout. No intentional misleading interpretations were made about the results. Appropriate credit and full acknowledgement was given by means of referencing other researchers for their thoughts, ideas and words (Leedy & Ormrod, 2004).

- **Beneficence**

The researcher made use of a research design that was well thought through, and seriously strived to conduct the research in a competent and professional manner. In terms of the relevance of the topic in the South African context, the research outcomes should provide valuable insight where new strategies for the enhancement of the phonological awareness skills of Black Grade 4 learners in a multi-cultural and multi-lingual context are much needed. These skills are, collectively, regarded as the most important predictor for later reading and spelling success which, in its turn, is an invaluable tool for the optimal development of any twenty-first century society.

- **Non-maleficence**

This research did not, at any stage, pose any physical or psychological risks; nor did it expose the participants to any risks greater than the normal risks of day-to-day living. The participants were at most inconvenienced, by being subjected to the tests mentioned in 3.3. However, all the parents and the participants knew before hand exactly what this research processes required (Appendices C and D).

- **Distribution**

The research report will be made available to the school that constitutes the context in which this research was done. In so doing, the researcher hopes that teachers at this

school will gain insight into phonological awareness skills in their unique context and they will understand the effect that this context may have on the development of these skills.

- **Ethical clearance**

The submitted research proposal for this project was approved by the Faculty Humanities' Research Proposal and Ethics Committee, University of Pretoria (Appendix A).

3.5 POPULATION AND SAMPLING

The population were sourced from a Grade 4-class at the selected school. The following criteria were followed during the selection of participants.

3.5.1 Criteria for the selection of participants

- **Age**

The participants had to be between the ages of 9 years, 11 months and 10 years, 11 months at the time of data collection. This is the normal age of learners in the final term of Grade 4. Grade 4-learners were chosen, as this is the first grade to form part of the intermediate phase of education and marks the beginning of formal reading and writing instruction (Gultig et al., 1998). This criterion is congruent with the aim of this study, which is to explore the effect of a multi-cultural and multi-lingual context on phonological awareness skills, specifically of Grade 4-learners in a primary school setting in South Africa.

- **Educational level**

All participants had to be in the final term of Grade 4 at the time of testing to ensure that all the participants were exposed to at least 9 months of formal reading- and writing instruction. As previously stated, the formal stage of reading and spelling instruction is introduced in Grade 4 (Gultig et al., 1998).

- **First language**

The participants had to be first language speakers of any African language.

- **Language of instruction**

All participants had to be learners in a mainstream school where English was the Language of Learning and Teaching (LoLT), because this study explores the effect of a multi-cultural and multi-lingual educational setting on the phonological awareness skills of learners in a setting where English is the only medium of instruction, regardless of the learners' first language.

- **Race and gender**

The selected participants had to be black African children to be a representative sample of the wide variety of cultures and languages within the multi-lingual, multi-cultural context in South Africa (Broom, 2004; Chick, 2002; Mutasa, 2000). Gender was not controlled for in this study, as it was more important for this research study to be representative of as many of the African languages as possible.

- **Normal hearing**

All participants had to have normal hearing and middle ear functioning at the time of testing. The concept 'normal hearing' specifies normal air conduction thresholds at or below 15dB for frequencies 125 – 8000 Hz (Martin & Clark, 2000; Katz, 1994), and normal middle ear functioning (a normal type A tympanogram with middle ear pressure of between -100 and +50 daPa, and a static compliance of between 0,3 and 1,75cm^3 at the time of testing (Katz, 1994). Impaired hearing may have an effect on the results of the standardized tests for the evaluation of the participants' phonological, language, and phonological awareness skills (Owens, 1999).

- **Controlled hyperactivity**

In cases of hyperactivity the condition had to be controlled (the participant should have taken his/her medication on the day of testing). Hyperactivity may have a negative impact on the results because poor attention which is one of the symptoms of this condition may lead to inaccurate responses on the test items (Owens, 1999).

- **Normal cognitive abilities**

All the participants had to have, according to the teacher, normal cognitive abilities, which is a pre-requisite for acquiring reading and writing skills (Louw, Van Ede & Louw, 1998).

- **Speech language therapy**

None of the participants may have received any speech-language therapy in the past or at the time of the study, as this kind of intervention may have improved the abilities that were assessed in the current study.

3.5.2 Sampling method

In order to limit the effects of extraneous variables the researcher used random sampling (Struwig & Stead, 2002) to select the sample of 15 Grade 4-learners in such a way that any Grade 4-learner in the targeted context had an equal chance of being selected. This type of selection was used in order to ensure that the characteristics of the 15 participants approximated those of the rest of the learners in Grade 4 (Leedy & Ormrod, 2004).

3.5.3 Selection of participants

3.5.3.1 Materials and Apparatus used for the selection of participants

In order to select the research sample group, the following materials and apparatus were used:

- Questionnaire for parents

The parents of the randomly selected participants were requested to complete a questionnaire compiled by the researcher (Appendix E). This questionnaire covered areas such as the child's developmental history, hearing status, demographics, and exposure to English. The parents' answers were important for the researcher to determine whether a participant met the selection criteria as set out in 3.5.1. The questionnaire also rendered additional information that was useful for interpreting and understanding the results.

- Screening of hearing ability and middle-ear functioning

A screening test (Martin, 1997) was used to verify that the subjects met the set criteria regarding normal hearing. Screening of hearing for the frequencies 500, 1000, 2000Hz was performed by means of a calibrated MAICO 25 Portable Audiometer (calibrated January 2004 in accordance with SABS-requirements). Middle ear functioning was screened by using a GSI 28A Autotymp Middle ear Analyzer (calibrated January 2004 in accordance with SABS-requirements). The results of these screening tests were recorded on the informal score sheet designed by the researcher (Appendix K).

3.5.3.2 Procedure for selection of Participants:

The following procedures were followed during participant selection:

- The principal of the school where the research was conducted suggested that a letter be written which she could present to the management body of the school to explain the aims of the proposed study (Appendix B).
- The management body granted permission for the research to be conducted at this school (Appendix F). (The management body has the authority to give permission for any studies that may be conducted at their school, and they do not need to obtain permission from the Education Department of Gauteng).

- After ethical clearance was obtained from the Faculty of Humanities' Research Proposal and Ethics Committee of the University of Pretoria (Appendix A), a meeting was arranged with the principal of the primary school section of the school, the Head of Department (Intermediate Phase), and the Grade 4 teacher of the selected grade 4-class. (The fact that learners from only one Grade 4 class were used for the purposes of this study did not introduce any uncontrolled variables – all Grade 4 learners were randomly divided into two classes at the beginning of the year. Therefore, the learners in the selected class constitute representative sample of all the Grade 4-learners in this specific school). The research process was discussed with the principal, the head of the specific department and the Grade 4 class teacher, and a suitable time for the participant selection and data-collection process was chosen.

- Questionnaires for parents as well as the letters of consent were sent to the parents of all the learners in the selected Grade 4 class (Appendices D and E).
- A simple random sampling method was followed (Leedy & Ormrod, 2004), to select 15 potential participants from those children of whom the letters of informed consent from the parents were returned. Consent from the children was then obtained by explaining the procedure to the children, after which they were allowed the choice to sign a letter of consent or not (Appendix D).
- Screening of the potential participants' hearing ability and middle ear functioning determined the selection of the final 15 participants. If screening showed abnormal middle ear functioning, or abnormal hearing thresholds, the participant was excluded from the sample, and a new participant was selected by means of simple random sampling.

The following procedures were followed to determine the participants' middle ear functioning and hearing:

- The procedure for testing of middle ear functioning, as described by Northern and Downs (1984), was applied. The norms for normal middle ear functioning were applied (Silman & Silverman; 1991): Compliance: 0,3 – 1,75 ml; Volume: 1,0 – 1,5 cc/ml; Pressure: between - 100 daPa and + 50 daPa. The results were written down on the space provided for immittance measurements on the informal score sheet designed by the researcher (Appendix K).
- This researcher followed the ASHA (1978) procedure for screening of each participant's hearing functioning (Martin, 1997). The researcher started at 1000 Hz, followed by 500 Hz, and then 2000Hz and 4000 Hz. The frequencies included represents middle, low, and high frequencies of hearing (Northern & Downs, 1984). The pure tones were initially presented at 30 dB HL. The participant was required to press a response button every time he/she heard the tone. If a response was obtained, the researcher lowered the intensity in 10 dB steps. If the participant did not respond at a specific intensity, the intensity was raised by 5 dB until the 50% response criterion was met. The pure tone threshold was calculated for each ear (by adding the thresholds obtained at 500, 1000 and 2000 Hz, divided by 3). Thresholds between 0 – 15 dB were accepted as normal hearing (Martin & Clark, 2000; Martin, 1997). The results of

the screening of hearing were recorded on the informal score sheet designed by the researcher (Appendix K).

3.5.3.3 Description of Participants

Table 3.1 shows the biographic detail of the 15 participants that participated in the study.

Table 3.1: Biographic detail of participants.

Participant:	Age	Gender	First language	Nursery school attendance	Middle ear infections and treatment	Therapeutic intervention	ADHD Treatment?	Other
1	10 years, 3months	Female	Zulu	No	Had grommets inserted (on three occasions)	None	Yes, Metered dose inhaler	Asthma and headaches
2	10 years, 5 months	Female	Setswana	Yes, 2 years	None	None	No	None
3	10 years, 3 months	Female	Setswana	No	None	Occupational therapy	No	None
4	10 years, 9 months	Female	Northern Sotho	Yes, 2 years	None	None	No	None
5	10 years, 7 months	Female	Southern Sotho	Yes, 3 years	None	None	No	None
6	10 years, 11 months	Female	Xitsonga	Yes, 2 years	None	None	No	None
7	9 years, 11 months	Female	Xitsonga	Yes, 3 years	None	None	No	None
8	10 years, 5 months	Female	Xitsonga	Yes, 2 years	None	None	No	None
9	10 years, 5 months	Female	Northern Sotho	Yes, 4 years	None	None	No	None
10	10 years, 2 months	Female	Setswana	Yes, 3 years	None	None	No	None
11	10 years, 7 months	Female	Northern Sotho	Yes, 5 years	None	None	No	None

Participant:	Age	Gender	First language	Nursery school attendance	Middle ear infections and treatment	Therapeutic intervention	ADHD Treatment?	Other
12	10 years, 8 months	Male	Zulu	Yes, 4 years	None	None	No	None
13	10 years, 0 months	Male	Venda	Yes, 3 years	None	Occupational therapy	No	None
14	9 years, 11 months	Male	Setswana	Yes, 3 years	None	None	No	None
15	10 years, 10 months	Female	Northern Sotho	Yes, 3 years	None	None	No	None

From Table 3.1 it is clear that all the participants were in the age range of 9 years, 11 months to 10 years, 11 months. The group of participants consisted of 12 female, and 3 male children. Six of the African languages were represented in this sample (two of the participants were mother tongue speakers of isiZulu, four of Setswana, four of Sepedi, one of Sesotho, three of Xitsonga, and one of Tshivenda). Most (thirteen) of the participants attended nursery school. Only one participant presented with middle ear infections when he was younger, and only two participants received occupational therapy at a younger age. Only one participant had to control ADHD by means of a metered dose inhaler.

All of the participants that were selected met the set criteria (3.5.1).

3.5.3.4 Description of the rating assistant and the speech scientist

A rating assistant was used during the rating of the participants' phonological abilities, and a speech scientist with a linguistic background for the analysis of the participants' phonological skills. Table 3.2 provides the relevant information on the rating assistant and the speech scientist.

Table 3.2: Relevant information regarding the rating assistant and the consulting speech scientist.

Qualification	Work setting	Years of experience	Reason for selection
B.Communication Pathology: Speech-language therapy and Audiology	Community Service year	One year	Knowledge in the field of articulation and phonological disorders
BA (Pret.) MA (Pret.) DTE (Pret.)	Senior Lecturer, Department of Communication Pathology, University of Pretoria	40 years	Field of expertise: Articulatory phonetics, Acoustic phonetics, Phonology. BA included Sepedi 3 and Zulu 1

3.6 MATERIAL AND APPARATUS

The material and apparatus for data collection are summarized in Table 3.3.

Table 3.3: Material and apparatus used for the collection of data.

Area of evaluation	Test / Assessment tool	Justification	Additional Information
Phonological skills in English	The Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986)	According to literature it is essential to determine the level of development of phonological skills of the participants, as the level of these skills may predict phonological awareness competence (Carrol, Snowling, Hulme, & Stevenson, 2003). Research has shown that children with phonological disorders struggle significantly with phonological awareness tasks (Cowan & Moran, 1996).	Although this test is not standardised for Black South African children, it was implemented because of its wide use in clinical practice. The sole purpose for administering this test was to get some insight into the level of the phonological ability of the participants.
Expressive and receptive language abilities in English	Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980)	Research has shown that the speaking and understanding of a language plays a vital role in the development of phonological awareness skills (Cooper, Roth, Spence & Schatschneider, 2002; Rvachew, Ohberg, Grawburg & Heyding, 2003).	This test is routinely used in clinical practice in South Africa, and rendered the required information about the expressive and receptive English language abilities in of the participants.
Phonological awareness skills in English	The Phonological Assessment Battery (PhAB) (Frederickson, Reason & Frith, 1997).	It is important to know what the phonological awareness skills of the participants are in English, since English is the LoLT. The phonological awareness skills regarding English need to be on a level where it will enhance English reading and spelling (Dawber & Jordaan, 2002.).	The PhAB was included as part of the test battery because it is widely used in clinical practice. It tests a variety of phonological awareness skills, provides practice items in each sub-test and takes only 45 minutes to execute. It was also successfully used in research conducted by Pijper (2004).

Area of evaluation	Test / Assessment tool	Justification	Additional Information
Reading ability in English	The researcher used a selected English passage and participants were required to answer ten multiple-choice questions based on the content of the passage.	Reading, as part of a test battery to clarify the phonological awareness of a participant is a pre-requisite, as research shows the importance of reading and phonological awareness in relationship to one another (Betourne & Friel-Patti, 2003; McBride-Chang & Kail, 2002). The primary components of reading are the ability to decode words and to comprehend that which was read (Gilbertson & Bramlett, 1998).	The reading task that was selected was on the level of the Grade 4 learners. The participants were expected to read the passage out loud to the researcher to enable her to note the type of errors that occurred. Finally, the multiple-choice test was used to determine the participants' comprehension of the passage content. A reasonable time limit was set to allow all participants to read the passage and complete the required comprehension assessment. The technique set out above was implemented with success in a local study done by Pijper (2004).
Spelling ability in English	The researcher compiled a spelling test that comprised of words that forms part of the Grade 4 curriculum.	Spelling skills were assessed because of the close link between spelling and phonological awareness skills (Clarke-Klein & Hodson, 1995).	

It is important to note that the use of standardised tests in the current study, which are not necessarily culturally appropriate because they have not been standardised for the South African ELoLT context, was unavoidable because no tests that were developed in South Africa existed at the time of testing.

The participants' language production in English was assessed by means of sub-tests of the Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980). Figure 3.1 presents the *receptive* language abilities that were evaluated by this instrument, with a short definition of each ability as provided by Semel and Wiig (1980:23, 26, 28).

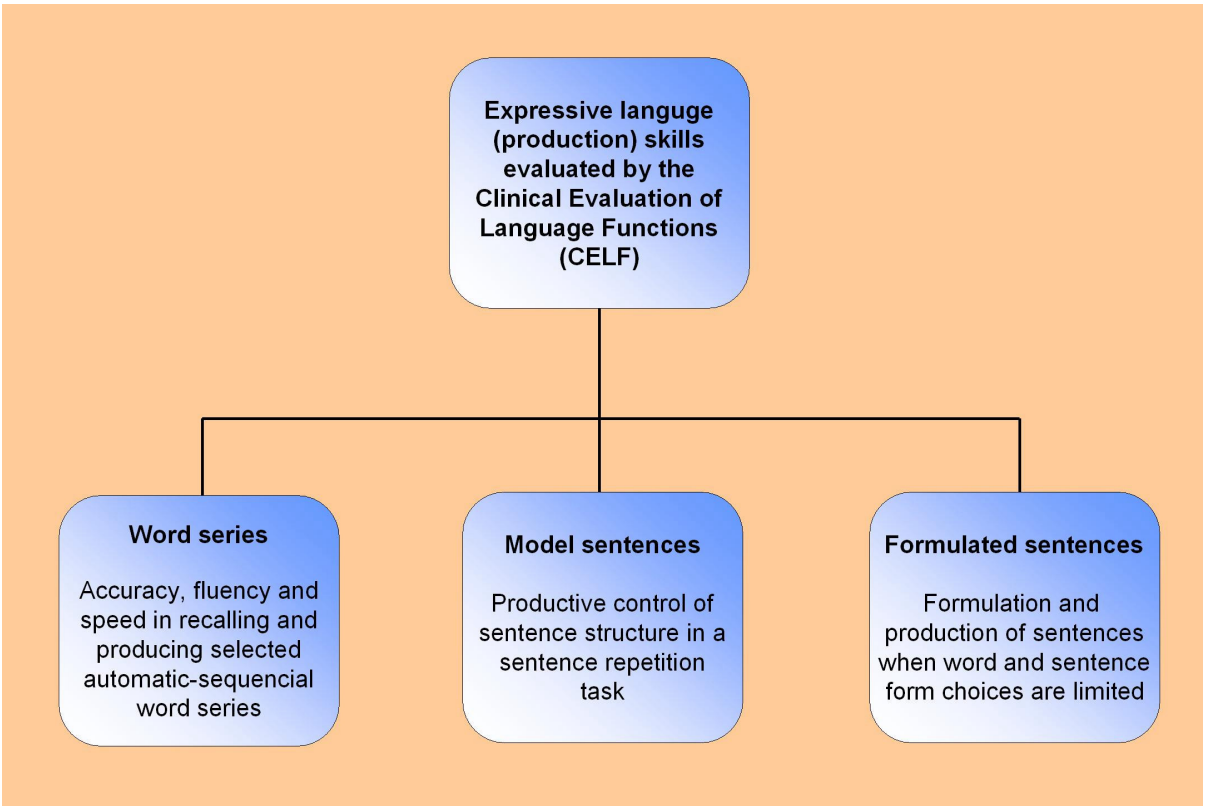


Figure 3.1: Receptive language abilities evaluated by the Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980).

Figure 3.2 presents the different *expressive* (production) abilities that were evaluated by the CELF, with a short definition of each ability as stated by Semel and Wiig (1980:23, 26, 28).

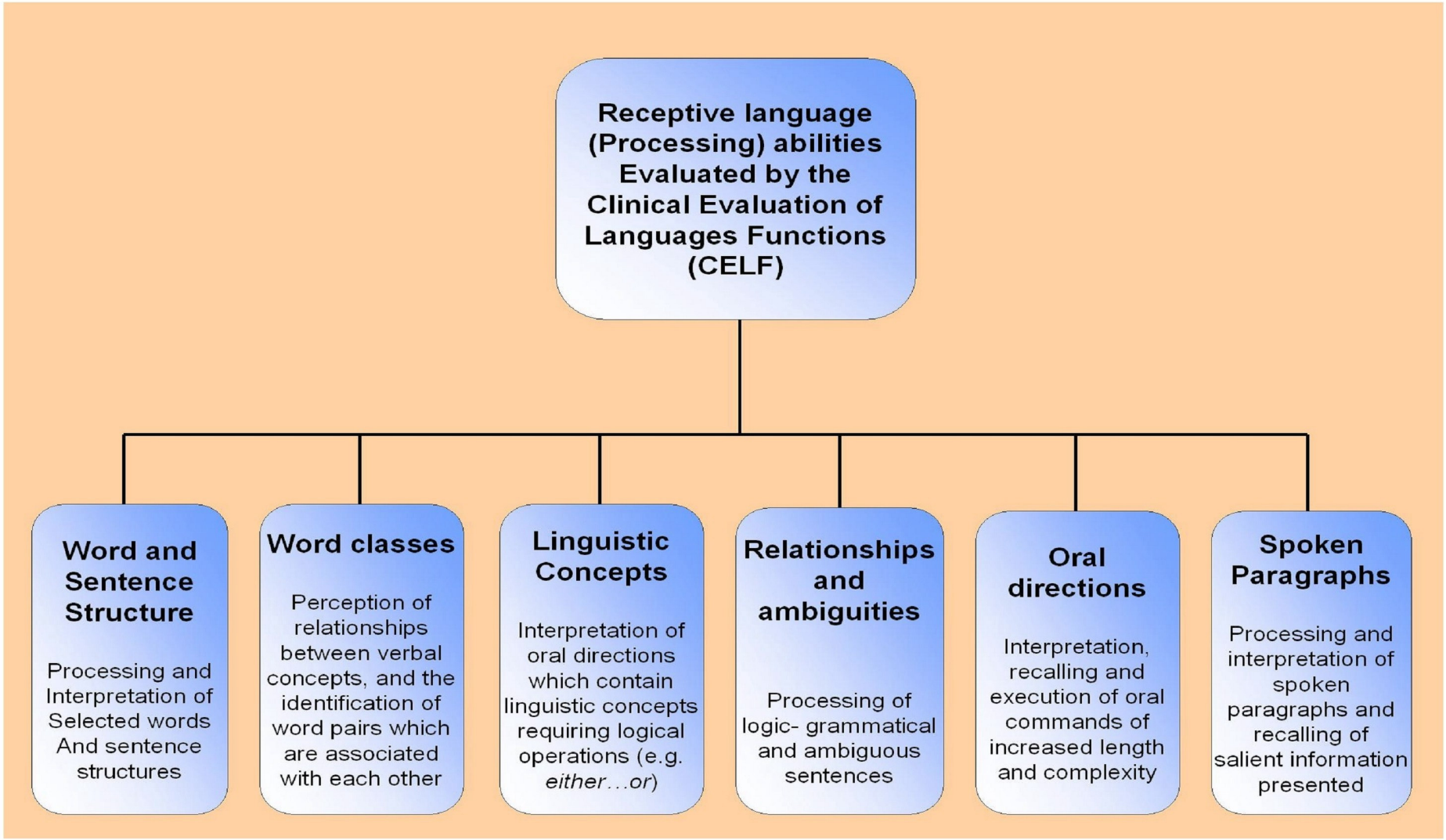


Figure 3.2: Expressive (production) ability evaluated by the Clinical Evaluation of Language Functions (CELF).

The participants' phonological awareness skills in English were determined by means of sub-tests of the Phonological Assessment Battery (PhAB) (Frederickson et al., 1997). Figure 3.3 shows the different skills that were evaluated, with a short definition of each, as formulated by Frederickson et al. (1997:65).

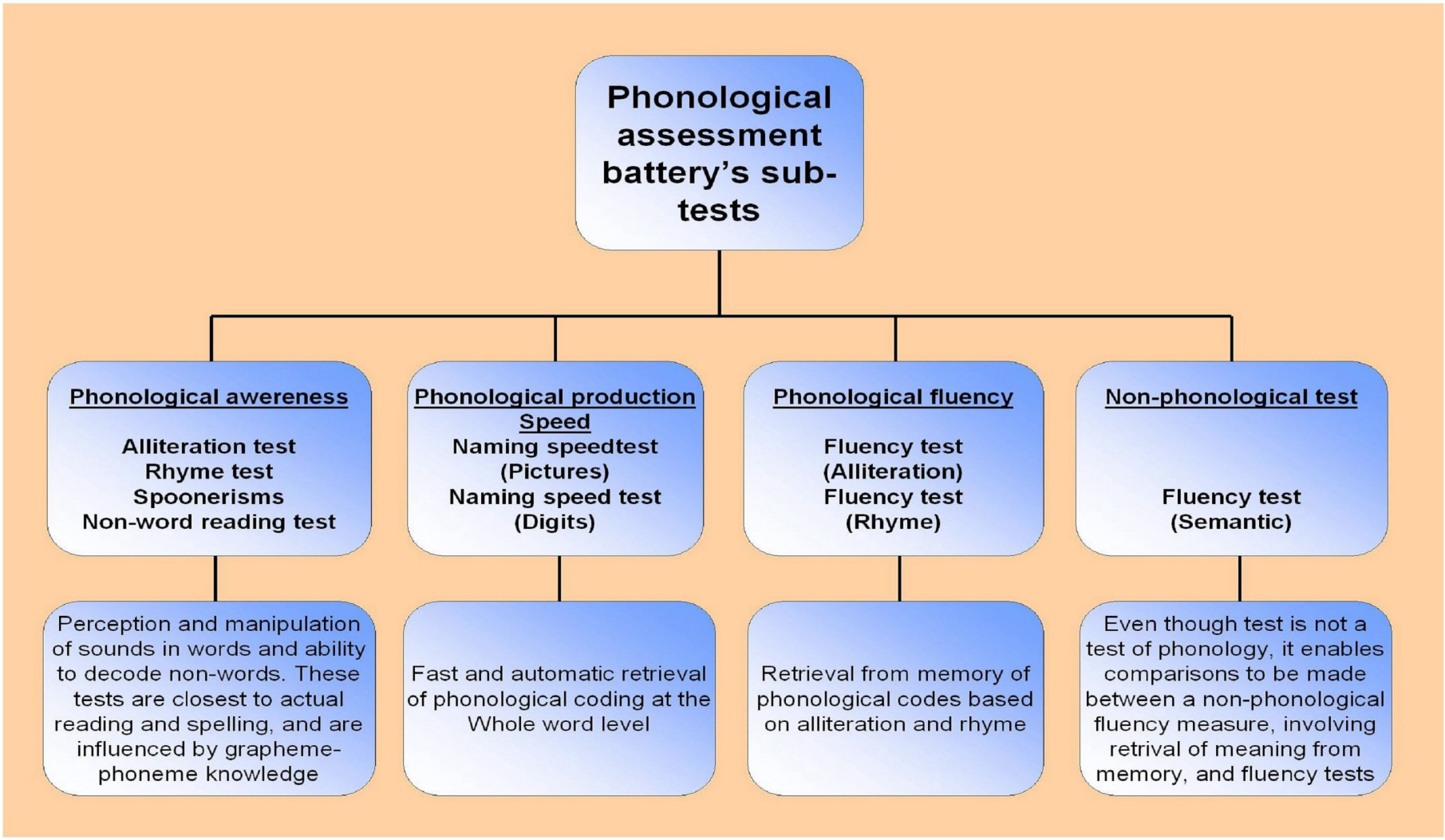


Figure 3.3: Sub-tests of the Phonological Assessment Battery (PhAB)

3.7 PROCEDURES

The procedures for data collection, data recording, and data-analyses are described below.

3.7.1 Pre-testing of the test battery

Aim of pre-testing

Pre-testing was done in order to evaluate the applicability of the measurement instruments, to compile a score sheet for summarising the results, and to evaluate the proposed data-analysis procedures (Leedy & Ormrod, 2004; Mouton, 2004; Struwig & Stead, 2002; Cjasa & Blair, 1996). Pre-testing determined the feasibility of the research, whether the proposed procedures and measurement instruments were appropriate in terms of the main and sub-aims, and to familiarise the researcher with the proposed research protocol (Leedy & Ormrod, 2004).

Description of the participant

One Grade 4-learner between the ages of 9 years, 11 months and 10 years, 11 months was selected as participant for the pre-study. This learner conformed in every respect to the same criteria as formulated for the participants of the main study (3.5.1), but she was in another school and excluded from the main study.

Procedures of the pre-testing

The measurement instruments as described in Table 3.3 (3.6) were used to elicit responses from the participant, and the tests were conducted as set out under 3.7.2 (*Procedures for collection of data*). The results were analysed as described under 3.7.4 (*Procedures for the analysis of data*), and were used to answer the main and sub-aims of this study. By using the exact procedure as set out at 3.6, 3.7.2, and 3.7.4, the researcher made certain adjustments to the protocol. These adjustments are set out below.

Pre-testing results and subsequent changes to the protocol

The pre-testing indicated that some sub-tests of the evaluation protocol were repetitive, which led the researcher to omit them in the main study. The omitted sub-tests of the CELF were

- *Producing Names on Confrontation*
- *Producing Word Associations*
- *Producing Speech Sounds*

According to the manual for the Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980), omission of these sub-tests, would not negatively impact on the reliability or validity of the test results. The abilities that are tested by these sub-tests were already evaluated by the rest of the protocol.

The time taken for the participant to complete the pre-testing was 115 minutes. This was well within the limits originally planned for. The *Score-sheet of Raw Data,* designed by the researcher, proved to be adequate for the recording of all the raw data (Appendix K).

3.7.2 Procedures for the collection of data

- Permission from the principal of the primary section of the school to test the children during regular school hours was obtained prior to testing. Informed consent from both parents and learners were obtained (3.4).

- Each participant was tested individually for approximately 120 minutes. The participants only completed one test session, as the researcher focused on one ability at a time (the researcher first conducted all the articulation tests, then the language test, then the phonological awareness test, followed by the reading test).

- Testing was done on consecutive school days and was completed within 2 weeks.
- Individual testing was conducted in a quiet room in the school. The participant

was seated opposite the researcher.

- Participants were tested during school hours because of transport arrangements (buses were the only mode of transport for the majority of learners, which meant that they could not be requested to remain after school hours).
- The Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986), Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980) and The Phonological Awareness Battery (PhAB) (Frederickson et al., 1997) were used and the recommended procedures as specified in the test manuals were followed.
- Informal tests (designed by the researcher) for the following abilities were conducted:
    - Reading abilities:

      A selected passage (adapted from the participants' Grade-4 reader) (Appendix H) was placed in front of the participant. The participant was asked to read the passage and was instructed to guess a word if he/she was uncertain. The types of reading decoding mistakes were recorded on an informal score sheet designed by the researcher (Appendix I). After the participant completed this part of the battery, the informal comprehension test was placed in front of him/her. The participant was requested to circle the correct answers on the answering sheet (Appendix H).
    - Spelling abilities

      The researcher collaborated with the class teacher to compile the spelling test (Appendix J). The spelling test consisted of words that were part of the participants' Grade 4 curriculum. To save time, the teacher conducted the spelling test three days before the data collection commenced. Clear instructions were given to the teacher.

The general guidelines for conducting least-biased assessment as suggested by Goldstein (2000:63-64) were followed during the testing. A research protocol, which included several formal and informal tests for assessment of the targeted areas, was implemented. The families of the participants completed the questionnaire for parents

(Appendix E) and permission forms (Appendices C and D). The purpose of the research protocol were clearly defined and described (by the sub-aims), possible limitations were acknowledged (culturally inappropriateness), and the most recent edition of the tests was used (Goldstein, 2000). For the purposes of this study, the researcher described the phonological awareness skills in ELoLT, without any adaptations for the specific culture.

3.7.3 Procedures for recording of data

The recommended procedures as specified in the test manuals of the individual formal tests (Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986); CELF (Semel & Wiig, 1980); PhAB (Frederickson et al., 1997) were meticulously followed to ensure reliability. Scoring and interpretation were done according to these instructions as well.

The informal tests were analysed as follows:

Test for reading abilities: The researcher analysed the decoding mistakes by using the informal score sheet designed for this purpose (Appendix I). Depending on the number of decoding mistakes, each participant's reading ability was described as *Poor, Average,* or *Good* (Appendix M). Multiple-choice answers were scored out of 10 (Appendix H)

Spelling abilities: The spelling test was scored out of 10 and the spelling mistakes were analysed (Appendices J and N).

3.7.4 Procedures for the analysis of data

The following procedures for the analysis were followed:

Qualitative analysis

The responses on the questionnaires received from each participant's parent/s were organised in the form of a table (Table 3.1). The parental observations assisted the researcher in the selection criteria, and also contributed to the eventual explanation of

the results.

Quantitative analysis

The researcher designed an informal score sheet on which all the raw data of the participants were entered (Appendix K). The statisticians used the informal score sheet to design a spreadsheet. Descriptive as well as inferential statistical procedures were used to analyse the data. The purpose of the statistical procedures was to summarise the raw data on the spreadsheet in such a manner that meaningful information could be extracted from it (Louw, 2005).

The first stage of statistical analysis, *descriptive statistics,* were used to draw bar charts for which numerical values (such as the mean, median, standard deviation, and minimum and maximum scores) were determined in order to gain more insight into the data (Louw, 2005).

The second stage of the statistical analysis, the *statistical inference,* used statistical tests aimed at reaching conclusions regarding the Grade 4 test population on the basis of the data obtained. Because the data falls on the level of continuous as well as categorical data – and due to the small sample size – the two non-parametric (distribution-free) statistical procedures, namely *The Mann-Whitney Test* and the *Spearman Correlation Coefficient* (Louw, 2005; Anderson, Sweeny & Williams, 2003; Keller & Warrack, 2000) were used.

The descriptive analysis enabled the researcher to describe the data, whilst inferential analysis enabled the researcher to make inferences about large populations from the small sample used in the study (Leedy & Ormrod, 2004).

Phonology

The participants' responses on the *Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986) were coded to show whether an articulation error or phonological process was present or absent (Appendix G). A second speech-language therapist was present throughout the testing of the participants' phonological abilities, and the researcher and this therapist compared the codes assigned to each participant's level

of phonological abilities. The phonological abilities of the participants were described on the segmental level of vowel and consonant variations. The single word utterances, which were elicited, were analysed with the assistance of a speech scientist with a linguistic background in terms of the above sound categories within the context of BSAE, since this variety of English has its own unique identity and ownership (Tesner, 2005; Kachru, 1986).

Language

The mean and standard deviation values of both the receptive and expressive language abilities were calculated separately for each participant and then combined, for the purposes of descriptive statistics, for each of the sub-tests of the CELF (Semel & Wiig, 1980). Descriptive statistics was used in the analysis of quantitative data to obtain the minimum and maximum scores for each sub-test on the CELF, as well as the mean, median, and standard deviations for each sub-test (Louw, 2005).

Phonological awareness skills

The mean and standard deviation values, as well as the minimum and maximum scores were calculated for the sub tests of the PhAB (Frederickson, et al., 1997).

Reading

The reading abilities of each participant were analysed on the level of reading decoding and comprehension. The decoding abilities of each participant were described as being *Good, Average* or *Poor* (Appendix M). The type of mistakes that occurred was coded and described (Appendix I). A numeric value (between 0 – 10) was assigned to represent the participant's scores in reading comprehension (Appendix H) (Broom, 2004).

The analysis of the participants' reading decoding abilities was done by determining the number of decoding errors (Appendix I). Both the researcher and the speech-language therapist analysed the reading samples in an attempt to maximise the validity and reliability of the results. Instances that could possibly be described as decoding errors were identified using a checklist compiled by the researcher. These errors are illustrated in Table 3.4. and included the following (as illustrated in 3.4):

Table 3.4: Descriptions or definitions of decoding errors.

Type of decoding error	Description or definition of decoding error
1. Omits words	Omitted an entire word from the passage.
2. Selects wrong words	Read an approximation of the target word.
3. Guesses words	Read a different word.
4. Repeats certain words	Read the target word, but repeated it.
5. Ignores punctuation	Paid no intention is to full stops, commas, question marks etc.
6. Reads each word separately	Fragmented reading with little or no fluency.
7. Sounds the words	Sounded the target word and pronounced it correctly.
8. Sounds, but cannot pronounce the word	Sounded he target word, but pronounced it incorrectly.
9. Has poor word recognition	Could not read the target word because of a lack of word attack abilities
10. Guides with finger	The participant used a finger to guide himself/herself during reading.
11. Does not recognize the words after modelling.	After the researcher modelled the target word, the participant still showed no word attack abilities.

For the evaluation of the participants' reading comprehension, the researcher formulated ten multiple-choice questions in order to determine the participants' understanding of the passage he/she had to read (Appendix H). A value (a mark out of ten) was assigned to represent the participants' scores on the level of reading decoding.

Spelling

A value (between 0 – 10) was assigned to represent the participants' scores on the spelling test. Reading error were analysed in terms of mistakes.

Combination and correlations of results

One-way frequency tables were compiled for each measurement and were interpreted and described by using descriptive statistics (bar charts were drawn and numerical values (such as the mean, median, standard deviation, and minimum and maximum scores) were determined).

As mentioned previously, the data falls on the level of continuous as well as categorical data and the sample size was small. Therefore, the non-parametric (distribution-free) statistical procedures, *The Mann-Whitney Test* and *Spearman Correlation Coefficient,* were used (Louw, 2005; Anderson, Sweeny & Williams, 2003; Keller & Warrack, 2000). The *Mann-Whitney Test* enabled the researcher to compare the mean values of the categorical and quantitative data. The *Spearman Correlation Coefficient* determined how effectively one or more variables predicted the value of another variable (Leedy & Ormrod, 2004). These inferences were used to describe the interrelatedness of the data, as well as how the phonological awareness skills correlated with the rest of the data (Leedy & Ormrod, 2004).

3.7.5 Reliability and validity

"Reliability is the consistency with which a measuring instrument yields a certain result when the entity measured hasn't changed" (Leedy & Ormrod, 2004:29). In order to attain reliability in this study, tests used clinically in South Africa were conducted. Testing was done in a consistent manner (by following every step in the test manuals), by one person (the researcher), and in the same environment and sequence (Leedy & Ormrod, 2004). The class teacher was the only assistant that was used during the collection of data (the speech-language therapist and the speech scientist assisted in the analysis of the phonological variations and the analysis of the reading samples).

"The validity of a measurement is the extent to which the instrument measures what it is supposed to measure" (Leedy & Ormrod, 2004:28). In order to reach informed conclusions from the collected data, the researcher strived throughout to ensure internal and external validity. Internal validity was addressed by eliminating possible other explanations for the results (through conclusive stipulation of the aims), and by using triangulation (where multiple sources of data were collected to describe the phonological awareness skills of a group of Grade 4 learners in a multi-cultural, multi-lingual context) (Leedy & Ormrod, 2004). External validity was met by selecting a sample of the broader black Grade 4 population in South Africa, describing the method of the current research in great detail, and by conducting the research in a

'real-life' setting (Leedy & Ormrod, 2004).

3.8 SUMMARY

Formal research requires that the researcher will state all the detail of a research method that will guarantee valid, reliable results. A comprehensive explanation of a method that was well thought through ensures replicability, and/or application of the research outcomes in daily practice (De Vos et al., 2005; Leedy & Ormrod, 2004).

In designing the method for this research project all the necessary precautions were taken to ensure that the research results would lead to a better understanding of the phonological awareness skills of black learners in multi-cultural, multi-lingual education context.

3.9 CONCLUSION

In this chapter, the researcher discussed the method that was followed in conducting this research. The main- and sub-aims for determining the phonological awareness skills of the participants were clearly stated, as well as the research design that formed the basis for the research. The criteria and selection procedures for the selection of the participants were discussed, as well as the materials and apparatus used for the collection of data. The procedures for collection, recording and analysis of data were also discussed in detail. The ethical implications of the study and the reliability and validity of the research received the due attention.

CHAPTER 4

RESULTS AND DISCUSSION OF RESULTS

Chapter aim: The aim of this chapter is to present the results in the order of the sub-aims specified for the study. The results are discussed and compared to the current body of knowledge to derive meaning from the results and determine their significance.

4.1 INTRODUCTION

"A profession that provides its own research base is much more in charge of its own destiny than a profession that doesn't."

(Kent, 1983:76)

In order to comply with the principle of beneficence in ethical practice (Louw, 2004; Leedy & Ormrod, 2004), speech-language therapists are required to consistently update and develop their knowledge, skills, and attitudes to maintain competency in clinical practice and to protect their clients (HPCSA, 2005). The overall purpose of research in Speech-Language Pathology is to generate new research, and to expand recent knowledge, skills, and ethical attitudes that will enhance and promote professional integrity and practice (HPCSA, 2005).

Internationally, the trend of increasing emphasis on research is related to the importance of evidence-based practice. Dollaghan (2004) states that best practice evidence occurs when individual clinical expertise is integrated with the best of the available external, systematic evidence-based research. In the quest for effective and efficient service delivery and evidence-based practice, the speech-language therapist is continuously faced with the existing incongruence between academic research and clinical practice (Van Kleeck et al., 1998).

This situation in the South African context is similar, where the need for effective and evidence-based practice is also evident. The multi-cultural and multi-lingual South African context poses special challenges to the pursuit of evidence-based practice.

An example that underwrites the above is the lack of knowledge regarding the phonological awareness skills of Black learners (whose mother tongue is almost always an indigenous language) in South Africa. Contradictory reports in international research regarding the transfer of phonological skills to a second and third language (Holm & Dodd, 1996), and the fact that educational success to a large extent hinges on adequate phonological awareness skills (Larrivee & Catts, 1999; Roth & Baden, 2001; Hodson, 1998), necessitates an in-depth investigation into the phonological awareness skills of these learners.

The results of this research project and the subsequent interpretation and discussion of these results provide an account of the phonological awareness skills of a group of Black learners in multi-cultural, multi-lingual context of South Africa, with the focus on proficiency of phonological awareness skills in an educational setup with ELoLT.

In order to extract as much relevant information as possible from this specific research regarding the phonological awareness skills of Black Grade 4 learners with ELoLT, a comparison was made between the participants' phonological awareness skills and their phonological, reading, spelling, and language abilities. The research outcomes pertaining to the aspects listed above were compared in an effort to develop a greater understanding of BSAE which may, in turn, lead to more appropriate applications in teaching and the facilitation of learning and, eventually, to the benefit of Black learners who are being educated in ELoLT.

The aim of this Chapter as previously stated will be achieved by interpreting the results of this study and comparing them to recent relevant research findings. A schematic illustration of the presentation of the results is provided in Figure 4.1.

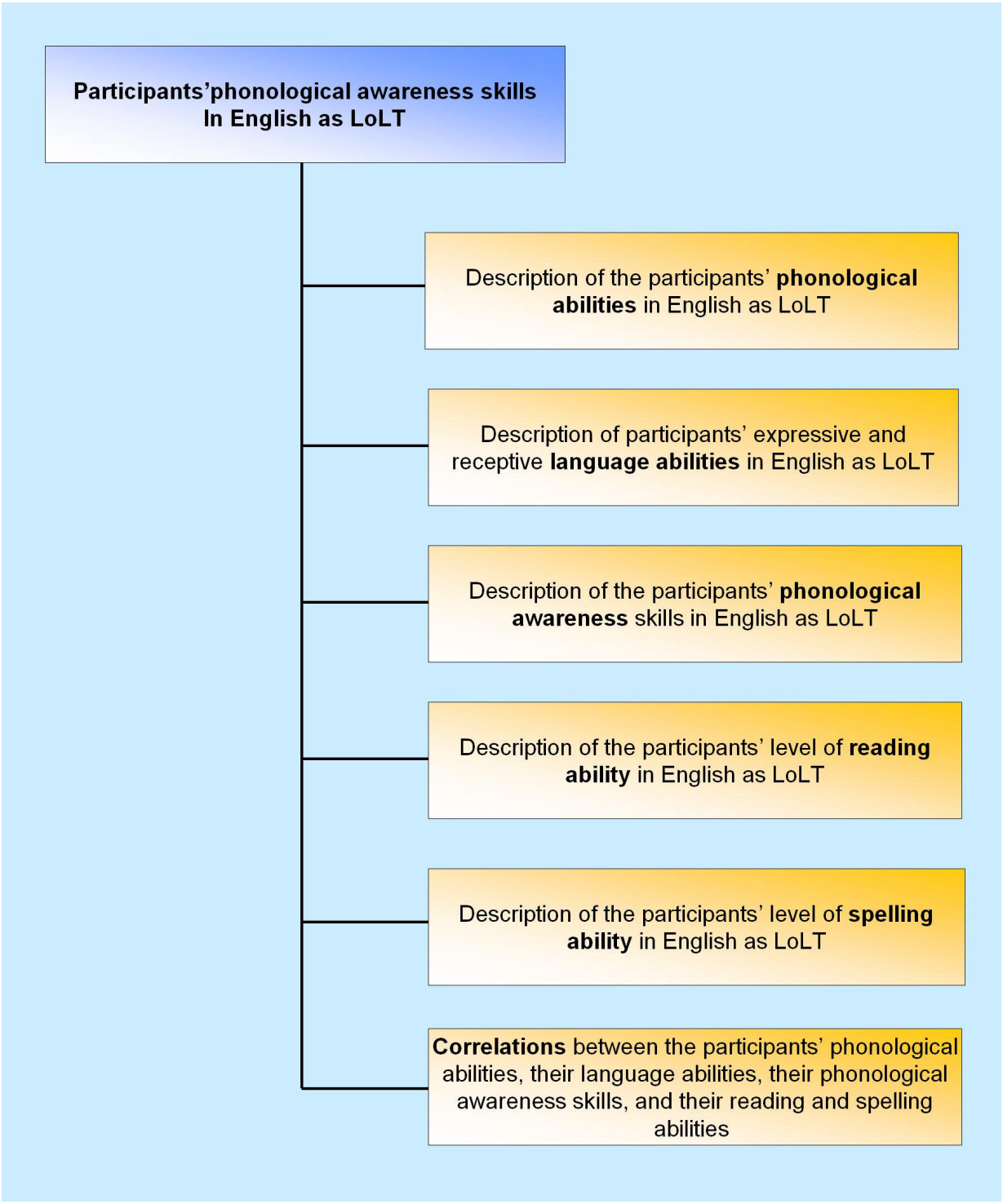


Figure 4.1: Outline of the presentation of the results.

4.2 PHONOLOGICAL ABILITIES

Addressed sub-aim: To determine the participants' phonological abilities in English by assessing vowel and consonant productions in single word utterances with the Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986).

To explain the variations of English that occurred in BSAE used by the participants in this study the researcher analysed their production of the target sounds elicited by *The Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986) in terms of phonological variations in consonants and vowels. These results should be interpreted with caution and the reader should consider the limited sample size, the fact that the sample was only single words and not continuous speech, as well as the heterogeneity of the first languages of the 15 participants.

4.2.1 Variations in the production of consonants

A summarised version of the prevalence of phonological variations in consonants as produced by the participants is presented in Figure 4.2.

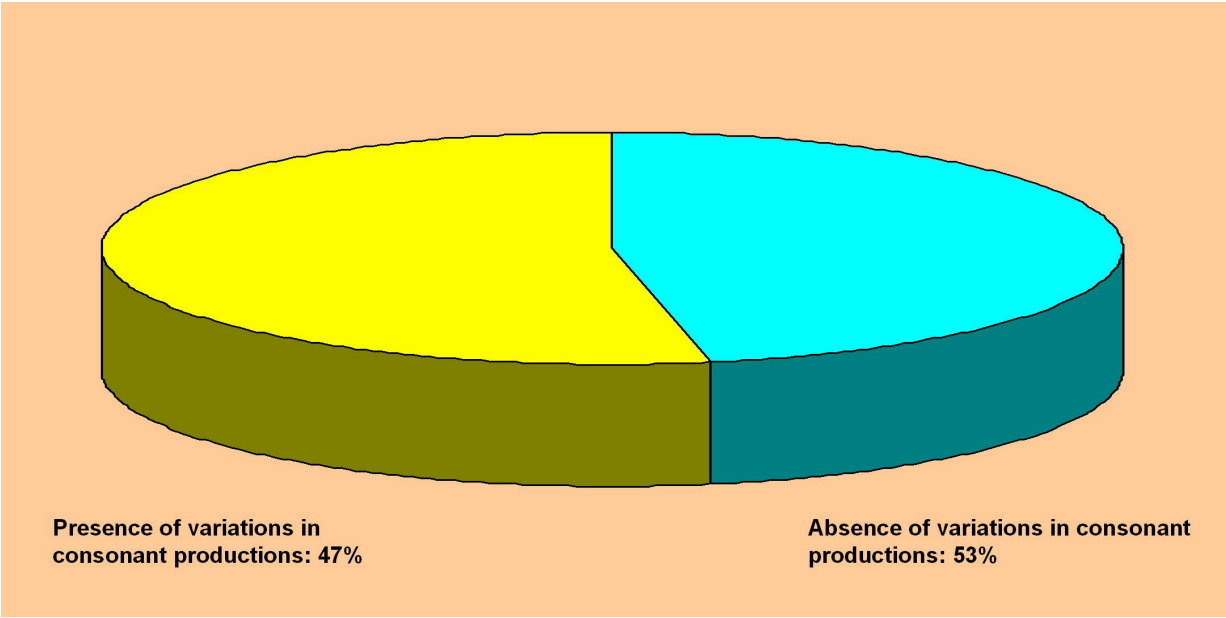


Figure 4.2: Phonological variations in consonant production of the participants in English *(n=15).*

Figure 4.2 shows that approximately half (47%) of the participants produced the target consonants with a phonological variation which is a characteristic of BSAE. Makalela

(2004) reports that the influence of the learners' first language on BSAE may cause phonological variations in BSAE since incipient bilingualism (or multi-lingualism) may contribute to the transfer of phonological features of the mother tongue to the second and/or third language (Van Rooy, 2002). The consonant production of the participants in this research appeared to confirm previously reported findings (Makalela, 2004; Van Rooy, 2002).

The target sounds were transcribed using the phonetic symbols of the *International Phonetic Association (IPA)* (Groenewald & Le Roux, 2005), and the results obtained for the seven participants who evidenced variations are illustrated in Table 4.1. It is important to note that the variations produced by the participants were analysed in terms of the traditional analysis of articulation errors since the researcher is familiar with this approach and also because of its wide international use. The term 'phonological variation' will be used instead of the term 'articulation error' as phonological variations induced by the mother tongue should not be considered to be articulation errors (Bland-Steward, 2005, Lanham, 1984).

Table 4.1: Phonological variation (PV) profiles of consonants produced by the participants *(n=7).*

Target sound elicited with abridged phonetic definition	Phonological Variation (PV) with abridged phonetic Definition	One example of target and elicited sound(s) (I= initial, M= medial; F= final position of the word)	Presence of PV as indicated by number of participant (P) *(n=7)*	First Language of participants	Type of variation			
					Substitution	Deletion	Distortion	Addition
[s]: 1. Spirate 2. Voiceless 3. Mid-alveolar blade-lingual 4. Fricative 5. Mid-oral 6. Egressive Single set	[θ]: 1. Spirate 2. Voiceless 3. Interdental tip-lingual 4. Fricative 5. Mid-oral 6. Egressive Single set	I: sleeping - [sliːpɪŋ] - [θliːpɪŋ] M: telephone - [tɛləfəʊn] - [tɛləθəʊn] F: house - [haʊs] - [haʊθ]	*n=2* P 3 P 9	Setswana Northern Sotho	✓	✗	✗	✗
[ɹ] 1. Spirate 2. Voiced 3. Back-alveolar blade-lingual 4. Frictionless continuant 5. Mid-oral 6. Egressive Single set	[ɬ]: 1. Spirate 2. Voiceless 3. Midalveolar-bladelingual 4. Frictionless continuant 5. Lateral 6. Egressive Double set	I: rabbit - [ɹæbɪt] - [ɬæbɪt] F: scissors - [sɪzəz] - [sɪzə ɬ]	*n=4* P 2 P 4 P 10 P 12	Setswana Northern Sotho Setswana Zulu	✓	✗	✗	✗
[l] 1. Spirate 2. Voiced 3. Mid-alveolar blade-lingual 4. Frictionless continuant 5. Lateral 6. Egressive 7. Single set	[l̪]: 1. Spirate 2. Voiced 3. Interdental tip-lingual 4. Frictionless continuant 5. Lateral 6. Egressive Single set	I: lamp - [læmp] - [l̪æmp] M: yellow - [jɛləʊ] - [jɛ l̪əʊ] F: wheel - [wiːɬ] - [wiː l̪]	*n=4* P 3 P 9 P 10 P 11	Setswana Northern Sotho Setswana Northern Sotho	✓	✗	✗	✗

Target sound elicited with abridged phonetic definition	Phonological Variation (PV) with abridged phonetic Definition	One example of target and elicited sound(s) (I= initial, M= medial; F= final position of the word)	Presence of PV as indicated by number of participant (P) *(n=7)*	First Language of participants	Type of variation *			
					Substitution	Deletion	Distortion	Addition
[ɹ] 1. Spirate 2. Voiced 3. Back-alveolar blade-lingual 4. Frictionless continuant 5. Mid-oral 6. Egressive 7. Single set	[ɻ]: 1. Spirate 2. Voiced 3. Midalveolar-bladelingual 4. Fricative 5. Lateral 6. Egressive 7. Single set	I: drum - [dɹʌm] - [dɻʌm] M: orange - [ɒrɪnʒ] - [ɒɻɪnʒ]	*n=2* P 11 P 12	Northern Sotho Zulu	✓	×	×	×
[ʃ] 1. Spirate 2. Voiceless 3. Front-palatal front-lingual 4. Fricative 5. Mid-oral 6. Egressive 7. Single set	[tʃ]: 1. Spirate 2. Voiceless 3. Front-palatal front-lingual 4. Closure followed by fricative 5. Mid-oral 6. Egressive Single set	M: fishing - [fɪʃɪŋ] - [fɪtʃɪŋ] F: brush - [bɹʌʃ] - [bɹʌtʃ]	*n=1* P 11	Northern Sotho	✓	×	×	×
[θ]: 1. Spirate 2. Voiceless 3. Interdental tip lingual 4. Fricative 5. Mid-oral 6. Egressive 7. Single set	[f]: 1. Spirate 2. Voiceless 3. Labio-dental 4. Fricative 5. Mid-oral 6. Egressive Single set	I: thumb - [θʌm] - [fʌm] F: bath - [bɑːθ] - [bɑːf]	*n=1* P 4	Northern Sotho	✓	×	×	×

① ✓ indicates the presence and × the absence of a phonological variation.

From Table 4.1 it is interesting to note that in the participants' production of single words; phonological variations occurred in the form of substitutions only. According to Bland-Steward (2005) the clinician dealing with different dialects or variations of English needs to be cautious when describing such speaker's realisation of phonological features. Every variation or dialect may have distinctive phonological features that may be *mistaken* for a substitution. Bland-Steward (2005), for example, cites the substitution of [θ] with [f]. (This, incidentally, is a common occurrence in the English of mother tongue speakers of Afrikaans, the reasons being firstly, that Afrikaans has no [θ] in its phoneme inventory and secondly, the close acoustic proximity of these two sounds.) This process manifested in the current study as well and these occurrences were not classified as errors, but rather as phonological variation (PV) arising from mother tongue transference.

Table 4.1 also indicates that the participants' generally favoured the interdental-tiplingual, midalveolar-bladelingual, labio-dental, and front-palatal-front-lingual places of articulation in the substitution process. This phenomenon is ascribed to mother tongue influence. Bernthal and Bankson (2004) state that, in the instance where a learner has two or more languages in his/her repertoire, the two languages tend to influence the pronunciation of sounds both ways. By comparing the different consonant inventories of the six African languages evaluated in this study, it is clear that the majority of consonants in the African languages are produced in the alveolar blade-lingual area of the vocal tract (Jones & Mollema, 2005). The consonant variations that were present in the participants' speech corroborated this statement, and it can therefore be explained in terms of first language influence.

The information in Table 4.1 shows that variations in production by these seven participants involve the following parameters of articulation:
Place of articulation: (85.7%)
Route of air flow: (28.6%)
Manner of articulation: (28.6%)
Place of articulation: (14.3%)

In the light of the selection criteria, the cause of the variations listed above can, at this stage, only be ascribed to the influence of the respective participants' first language and their out-of-school contact with BSAE.

English is an additional language of the participants (and in most cases their only significant exposure to English was as the language of learning and teaching) and it was evident that their first language influenced their pronunciation of English (Goldstein & Iglesias, 2005; Makalela, 2002; Van Rooy, 2002; Flege, 1987). Evidence abounds that spoken English is seriously influenced by the different first languages of BSAE speakers. This influence may impact negatively on eventual spelling and reading proficiency (Goldstein & Iglesias, 2004; Van Rooy, 2002; Tesner, 2004; Tesner, 2005).

4.2.2 Variations in the production of vowels

The vowel variations that occurred in the production of single words elicited by *The Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986) from all 15 participants are presented in Table 4.2. (The phonetic orthography is once again that of the IPA). Since vowel variations are directly attributed to mother tongue influence (Goldstein & Iglesias, 2005; Makalela, 2002; Van Rooy, 2002), participants were grouped in accordance with their first language. Although the *Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986) was not aimed at the testing of vowels, the researcher took the freedom to use a sample of the words elicited by this test to be phonetically transcribed and analysed in terms of the participants' pronunciation of the vowels in these words. In this regard it is important to emphasise that vowels marked in Table 4.2 as *Not elicited* are not necessarily absent in BSAE, but simply were not elicited in the restricted sample of *The Goldman Fristoe Test of Articulation* (Goldman & Fristoe, 1986) which is focused on consonants.

It is important to note that no Black South African English standard exists and that the variations noted in Table 4.2 are purely based on the speech perception abilities of the researcher and a second speech-language therapist (rating assistant), both of them trained listeners (Goldstein & Iglesias, 2004; Makalela, 2004; Van der Walt & Van Rooy, 2002; Van Rooy, 2002; Lanham, 1967). As discussed in Chapter 2, the

perception of different 'accents' is primarily ascribed to the acoustic quality of vowels – which, naturally, also causes the characteristic 'accent' of BSAE (Goldstein & Iglesias, 2004; Makalela, 2004).

Table 4.2: Phonological variations in vowel productions produced by the participants *(n = 15)*.

African Language Family (ALF)	First language of participants	Number of participants in each sub-section of the ALF's	Vowels of first language *	Usage in BSAE with an example if present
Nguni	Zulu	2	[i] [e] [ɛ] [a] [ɔ] [o] [u]	[fɪŋgə] Not elicited [tɛləfəːʊn] [haʊs] Not elicited Not elicited [bluː]
Sotho	Northern Sotho	4	[i] [e*ff*] [ɛ*f*] [ɛ] [a] [ɔ] [ɔ*f*] [o] [o*f*] [u]	[fɪŋgə] Not elicited Not elicited [tɛləfəːʊn] [haʊs] Not elicited Not elicited Not elicited Not elicited [bluː]
	Setswana	4	[i] [e] [ɛ*f*] [ɛ] [a] [ɔ] [ɔ*f*] [o] [o*f*] [u]	[fɪŋgə] Not elicited Not elicited [tɛləfəːʊn] [haʊs] Not elicited Not elicited Not elicited Not elicited [bluː]
Sotho	Southern Sotho	1	[i] [e*f*] [e] [ɛ*f*] [ɛ] [a] [ɔ] [ɔ*f*] [o] [o*f*] [u']	[fɪŋgə] Not elicited Not elicited Not elicited [tɛləfəːʊn] [haʊs] Not elicited Not elicited Not elicited Not elicited [bluː]
	Venda	1	[i] [ɛ] [a] [o] [u]	[fɪŋgə] [tɛləfəːʊn] [haʊs] Not elicited [bluː]

	Xitsonga	3	[i] [ɛf] [ɛ] [a] [ɔ] [o] [u]	[fɪŋgə] Not elicited [tɛləfəːʊn] [haʊs] Not elicited Not elicited Not elicited

* The transcription of vowels was based on vowel charts for the individual African languages that have been modelled on recommendations by the *International Phonetic Association* (Le Roux, 2005; Jones & Mollema, 2005).

As depicted in Table 4.2, all participants evidenced vowel variations. Once again it must be noted that these variations were based on perceptual decisions by White South African speakers of English, and only in single words elicited by the *Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986). Both the researcher and the rating assistant were, however, trained to listen analytically.

These findings differ from those of Table 4.1 where seven of the participants exhibited consonant variations. This discrepancy may, in all probability be attributed to the fact that vowels are more susceptible to mother tongue influence and that PV in vowels are more characteristic of BSAE than consonants and vowels could be the primary carriers of the perceptual cues that causes listeners to perceive the characteristic qualities often called 'accents' whereby dialects and lesser language variations are identified. Conclusive opinions about these issues, however, fall outside the scope of this study.

According to Jones and Mollema (2005) and Lanham (1967), the Sotho-languages have a basic set of seven vowels; the Nguni-languages and Venda have a set of five basic vowels, whilst South African English (SAE) has a set of 20 vowels. African languages therefore have fewer vowels than SAE. Since BSAE is a variation of SAE, it also has 20 vowels, but the influence of the mother tongue on phonological variations cannot be denied, and may be a precursor of the variation in pronunciation of the vowels of BSAE (Bland-Steward, 2005: Makalela, 2004; Van der Walt & Van Rooy, 2002). This difference in the number of vowels as well as the place and manner of articulation, may explain the occurrence of phonological variations during the production of vowels in all 15 participants in the current study.

It is to be expected that a phonetic transcription of the vowels in BSAE may render more than the number of vowels previously cited for the different African languages, simply because of the much larger number of vowels in the targeted English. This implies that the *production* of some, but not all, vowel qualities of White South African English are mastered at the Grade 4 level of teaching with ELoLT. It should however, never be assumed that these learners are not able to *perceive* the twenty different qualities of White South African English. This is part of the reason why these productions cannot be described as 'wrong'.

The results of this study clearly show that some of vowel features of the participants' first language persist in BSAE. The vowel inventories of Black languages categorised as belonging to the same group, e.g. Nguni or Sotho, show striking similarities. There is, for instance, a significant correspondence between the vowel systems of Setswana and Sepedi, both belonging to the Sotho group of indigenous languages. The smaller number of vowels in the inventories of these languages compared to that of SAE may contribute to auditory perception with reference to the first language vowel matrix which, in turn, may lead to the production of vowel qualities within that framework. These qualities will naturally be perceived as 'different' by English first language and should rightly be called 'phonological variations', but never 'deviant speech'.

Evidence corroborating the above is to be found in published research findings regarding the acquisition of vowels in a second language; within any specific language vowel *quality* is mostly phonologically contrastive, whilst the prosodic (or supra-segmental) feature of vowel *duration* is not contrastive in the African languages (Wissing, 2002). Afrikaans, for instance, uses this feature contrastively as in the pronunciation of the word "pers" as either [pærs] or [pæ**:**rs], where the former means *press* and the latter means *purple.*

This linguistic phenomenon was confirmed in the current study where the participants exhibited difficulty with some of the vowel qualities of SAE, but even more so in producing the appropriate degree of vowel duration of the South African English standard. This phenomenon explains the majority of vowel phoneme variations reported in this investigation.

According to the traditional transfer based theories; both the *production* and *perception* of vowels are more readily transferred to the production of the vowels of the additional language if the segmental and supra-segmental features of the vowels in the two languages in question were more similar (Wissing, 2002). This statement was certainly confirmed by the findings of this study.

The above analyses and subsequent results are valid for the restricted sample elicited from the participants only and it must be assumed that a sample of spontaneous speech would have yielded more detailed information regarding the participants' vowel productions. Clinical observations by the researcher revealed that all the participants' conversational speech showed the characteristics of BSAE

The phonological abilities of the participants showed consonant and vowel variations that can be linked to mother tongue influence, and the segmental and supra-segmental characteristics of BSAE.

4.3 RECEPTIVE AND EXPRESSIVE LANGUAGE

Addressed sub-aim*: To determine the participants' receptive and expressive language abilities in English as LoLT by using sub-tests of the Clinical Evaluation of Language Functions (CELF) (Semel & Wiig, 1980).*

Data was collected by using sub-tests of the *Clinical Evaluation of Language Functions (CELF)* (Semel & Wiig, 1980). The results are presented in terms of the participants' receptive language abilities, their expressive language abilities, and an integration of their receptive and expressive language abilities.

4.3.1 Receptive language abilities of the participants

The results of the participants' receptive language abilities in English are presented in the form of the descriptive statistics on each sub-test of the receptive language of the *Clinical Evaluation of Language Functions* (CELF) (Semel & Wiig, 1980) in Table 4.3.

Table 4.3: Receptive language abilities of the participants in English *(n=15).*

Sub-test (and targeted area)	Mean	Suggested mean for Grade 4	Standard deviation	Minimum	Maximum
1. Word and sentence structure	68.8	73.08	8.9	56	81
2. Word classes	58.8	68.18	22.1	14	91
3. Linguistic concepts	73	77.27	11.1	55	86
4. Relationships and ambiguities	63.4	56.25	12.1	38	91
5. Oral directions	75.2	64	14.8	32	92
6. Spoken paragraphs	37.4	23.53	11.8	24	59

From Table 4.3 it is clear that the mean values achieved by the participants for the sub-tests *Relationships and ambiguities*, *Oral directions* and *Spoken paragraphs* were higher than the suggested mean for participants in Grade 4 (Semel & Wiig, 1980). The results obtained on the sub-tests *Word and sentence structure*, *Word classes,* and *Linguistic skills* are, however, lower than the suggested mean for Grade 4 (Semel & Wiig, 1980).

It is seems that the linguistic demands on the learner required by the first three sub-tests (*Word and sentence structure*, *Word classes,* and *Linguistic skills)* were more complex than those associated with the remaining sub-tests of the test (*Relationships and ambiguities*, *Oral directions,* and *Spoken paragraphs).* Even though the researcher presented the instructions of the different sub-tests explicitly, the instructions of the first three sub-tests required an in-depth understanding of English, since the instructions required tasks that were linguistically complex, and the participants presented with below average abilities in these three sub-tests.

4.3.1.1 Processing of word and sentence structure

As indicated in Figure 3.1 (Chapter 3) the sub-test *Processing word and sentence structure* encompasses the processing and interpretation of selected words and sentence structures, for example "*The lamp is behind the chair*". Each item in this sub-test introduced a construct of higher syntactic complexity where the participant

was required to identify the pictorial representation of each item (Wiig, Becker-Redding & Semel; 1983). The participants as a group achieved a mean score of 68.8%, which is below the suggested mean of 73.08% for Grade 4 learners. It was evident that the participants found these elements of the CELF (Semel & Wiig, 1980) difficult. The complexity of the sentences in this sub-test gradually increased and from the results it was clear that the participants struggled to understand these syntactic constructions and was therefore unable to provide the required response. According to DeKeyser (2005) grammatical complexity is influenced by three factors, namely: complexity of form, complexity of meaning and complexity of the form-meaning relationship. Regardless of the form used to express meaning, the meaning itself can pose a source of difficulty, because of novelty, abstractness or a combination of both (DeKeyser, 2005). The current results support the findings of Jarvis (2002) who states that the process of acquiring articles, classifiers, grammatical gender and verbal aspects are a complex process for first-language speakers of a language and it can be deduced that for the participants in this study – all being EAL learners – the situation is even more complex (DeKeyser, 2005; Jarvis, 2002).

According to Van Riper and Emerick (1990) and DeKeyser (2005) it is important to distinguish between language competence (the knowledge of the features and structure of language) and language performance (the use of language in communication). It is clear from the results that the opaqueness of the form-meaning relationships in English as LoLT could have resulted in the lower than expected mean score in this sub-test of the CELF (DeKeyser, 2005) and this may, at least in part, be ascribed to less than average English language competence of the participants in this study. In this sub-test, the CELF (Semel & Wiig, 1980) focuses on the evaluation of the participants' receptive language abilities, and the participants could rely heavily on their Basic Interaction Communication Skills (BICS). The participants' Cognitive Academic Language Proficiency (CALP) was of minor importance (Cummins, 1980) because this section of the CELF (Semel & Wiig, 1980) accentuates the importance of functional language on an individual's overall receptive language performance (Owens, 2001). It was concluded that even though the participants could rely more on their BICS, these skills could not be considered adequate for meeting the demands of the classroom situation.

It is further postulated that the participants as EAL learners with ELoLT might have had a limited vocabulary in English and also could not implement the language rules of English, which may have contributed to their poor performance in this sub-test (Le Roux, 2005). According to ASHA (1985) a continuum of proficiency exists in English in a multi-cultural population. This continuum includes proficient bilingual English speakers, speakers with limited proficiency in English, and speakers of limited proficiency in both English and the native language. Although the participants' first language abilities were not evaluated in this study, Owens (2004) proposes that different factors might influence the development of children's ability in their first language. Low socio-economical status (Owens, 2001) and the possibility of poor parental guidance (Hennop, 2004) might be contributing factors to limited first language stimulation. Even though the important role of BICS in the functional language abilities of the participants cannot be ignored, CALP will still remain the most important predictor of the participants' academic success. The results clearly indicate that the participants will not be able to meet the demands associated with the processing of word and sentence structure in the classroom context, possibly due to insufficient CALP abilities and will struggle to meet the academic demands of the classroom context.

4.3.1.2 Processing of word classes

Table 4.3 indicates that the participants obtained a mean value of 58.8% in comparison with the suggested mean of 68.18% in the sub-test *Processing of word classes* of the CELF (Semel & Wiig, 1980), which is substantially lower than the suggested mean. Each stimulus item consisted of three or four words, two of which was related by association. From these, the participant was asked to choose the two congruent words (Wiig, Becker-Redding & Semel; 1983; Semel & Wiig, 1980). Where the participant's vocabulary perhaps did not include the meaning of all the given words, he/she invariably selected the wrong words. Although the number of errors varied between the participants, all the participants did, at times, select the incorrect words and therefore performed below the suggested mean of the CELF (Semel & Wiig, 1980).

These findings may once again be explained by the mismatch that exists between the participants' BICS and CALP. Word classes fall in the domain of CALP (Cummins, 1980; Semel & Wiig, 1980) and an inability to classify and select, as well as their limited vocabulary, may explain the poor results obtained in this sub-test.

4.3.1.3 Processing of linguistic concepts

On the level of linguistic concepts (Table 4.3), the participants in this study scored a mean of 73%, once again lower than the suggested mean of 77.27% for learners in Grade 4 (Semel & Wiig, 1980). The results indicate that concepts like 'except', 'instead', 'either…or', and 'after' were not part of the participants' linguistic knowledge of English. In order to understand the results obtained in the current study it is extremely important to take into account the complex implicit differences that exist on various linguistic levels between the African languages and English (Seeff & Jordaan, 2000). Even though the same linguistic concepts may be present in the different languages, they are expressed on the level of the syntactic surface structure in vastly different ways. The implication is that it is to be expected Grade 4 learners with ELoLT will experience serious difficulties in verbalising these concepts in English. It was evident that the linguistic concepts evaluated by the CELF (Semel & Wiig, 1980) may not be fully integrated in the participants understanding of the English language system, and may be a possible explanation of the below-average results obtained in this sub-test of the CELF.

4.3.1.4 Processing of relationships and ambiguities

For the sub-test *Processing relationships and ambiguities* Semel & Wiig (1980) propose a suggested mean of 56.25%, but Table 4.3 shows that the participants performed above this mean with a score of 63.4%. In this sub-test participants were only required to respond with either 'Yes' or 'No' which may have been a less complex requirement than those of the other sub-tests. This simple request might have contributed to their improved performance. Furthermore, these results may be explained by the findings of DeKeyser (2000) who conducted a grammatical judgment test for English second language learners and found a tendency that yes/no-questions

were resistant to age-effects, and could be answered relatively easily. This method of answering questions in a closed-set manner is often implemented in the classroom situation and can be included in BICS (Cummins, 1980). Therefore, these specific results cannot be interpreted as a true reflection of the participants' processing abilities regarding relationships and ambiguities. These results, however, clearly indicates that the manner of assessment in a multi-cultural, multi-lingual population should be dynamic and should include formalised tests as well as clinical observations (Kohnert, & Goldstein, 2005).

4.3.1.5 Processing of oral directions

In terms of this sub-test of the CELF (Semel & Wiig, 1980), Table 4.3 shows above-average results (an average mean of 75.2% achieved by the participants in this study, in contrast with a suggested mean of 64%), and also that the format of instruction was easily understood by the participants. The addition of visual clues in this sub-test of the CELF (Semel & Wiig, 1980) may also have decreased the complexity of the task (Edmonston & Thane, 1992). Despite the additional visual clues in the CELF (Semel & Wiig, 1980), the results can be considered accurate if compared to literature regarding the oral culture of mother tongue speakers of the various indigenous languages (Le Roux, 2005; Le Roux 2004).

4.3.1.6 Processing of spoken paragraphs

Regarding the sub-test *Processing of spoken paragraphs* of the CELF (Semel & Wiig, 1980), Table 4.3 shows that the participants' mean results are on a higher level, namely 37%, compared to the suggested average mean of 23.3% for Grade 4 learners.

It is clear that the participants' 'functional' language played a role in the results obtained in this subsection, probably because the participants could rely on pre-learned, 'automatic' language by relying on their BICS (DeKeyser, 2005; Dawber & Jordaan, 2002).

4.3.1.7 Conclusions regarding receptive language abilities

Literature has shown that learners may function well on the level of BICS, but may not be coping on the level of CALP (DeKeyser, 2005; Dawber & Jordaan, 2002). The results clearly indicated that the participants performed well on the levels of *Relationships and ambiguities, Oral directions,* and S*poken paragraphs,* probably because the demands on their language system were basic and simple. These skills form part of their day-to-day use of English. It appears that, for this reason, the participants could cope more readily with the demands imposed by these sub-tests of the CELF (Semel & Wiig, 1980) which rely more heavily on the participants' abilities in BICS. In contrast, however, the abilities assessed in the sub-test *Word and sentence structure, Word classes,* and *Linguistic skills* required an advanced 'academic proficiency', and consequently performance in these sub-tests of the CELF (Semel & Wiig, 1980), which relied primarily on CALP, was below average.

It was clear that when a demand of an academic nature was made on the participants' LoLT; all of them were unable to meet that demand. The results indicated that the participants were able to cope on the level of their BICS, but that their CALP was inadequate. BICS, in general, is far more realistic and also easier to acquire. CALP, on the other hand, is an abstract concept that takes five to seven years – from the initial exposure to the LoLT – to develop (Owens, 2001; Cummins, 1980). These sub-tests of the CELF (Semel & Wiig, 1980) mirror the highly de-contextualized tasks that are often found in school, but do not reflect social interaction and every day use of language (Owens, 2001).

4.3.2 The participants' English expressive language abilities

The results of the descriptive statistics on each sub-test of the expressive language of the Clinical Evaluation of Language Functions (CELF) are presented in Table 4.4.

Table 4.4: Participants' English expressive language abilities *(n=15).*

Sub-test of the CELF	Obtained mean values	Suggested mean for Grade 4	Standard deviation	Minimum	Maximum
1. Word Series	99.7	100	1.3	95	100
2. Model sentences	61.2	60	13.6	40	83
3. Formulated sentences	33.7	26.04	13.8	10	63

Table 4.4 shows the means scores achieved by the participants for the different tests. *Production of model sentences* and *Production of formulated sentences* were higher than the suggested mean for grade 4. The fact that the participants' mean for *Word series* were below the suggested mean can be explained by the limited sample within which *one* participant achieved below the suggested mean for Grade 4 learners and thereby causing the low average performance of the whole group (Semel & Wiig, 1980).

4.3.2.1 Producing word series

Even though the mean of the sub-test *Producing word series* of the participants was marginally lower (99.7%) than is expected from grade 4-learners (100%) (Semel & Wiig, 1980), most of the participants (14 of 15) were able to perform the production of the word series and the results can be described as being age-appropriate. This sub-test required the participants to recite the days of the week and the months of the year (Wiig, Becker-Redding & Semel; 1983). The participants were familiar with this activity, as they often are expected to perform this type of activity in the classroom. The educational emphasis on learning by rote as well as the curriculum content of the foundation phase could be possible explanations for the good performance on this sub-test (Cummins et al., 2005; Wiig, Becker-Redding & Semel; 1983). The results indicate that the participants had mastered the production of the required word series in ELoLT.

4.3.2.2 Producing model sentences

The sub-test *Production of model sentences* asked for a verbatim repetition by the participants of sentences that was read by the researcher. The said sentences increased in terms of in semantic-syntactic complexity and word count from item to item (Wiig, Becker-Redding & Semel; 1983). The results reflected in Table 4.4 indicate that the participants were able to perform slightly better (an average mean of 61.2%) than the expected mean (60%) for their Grade 4 learners (Semel & Wiig, 1980).

Pre-existing cultural and linguistic exposure of the participants regarding imitation could have lead to the transference of these skills to English (Cummins, et al., 2005). It has been mentioned in literature that speakers of African languages have no difficulty with imitation, as historically, they primarily relied on the spoken word (Crisp, 1881; Frédoux, 1864). The history of the African people and their cultural inheritance firmly rests on a solid oral foundation (Le Roux, 2005; Le Roux 2004).

4.3.2.3 Production of formulated sentences

The mean score of 33.4% for *Production of formulated sentences* was, as reflected in Table 4.4, higher than the suggested mean of 26.04% (Semel & Wiig, 1980). In this sub-test the instructions provided were clear and concise and so were the requirements and these factors may be regarded as causative of the age-appropriate performance. The participants appeared to cope especially well with phrases and language structures that occur with a high frequency in everyday conversational speech. Social use of English, such as in this sub-test does not require any 'language-technical' application of English, and this might also have contributed to the age-appropriate mean score.

4.3.3 Language abilities of the participants

The results of the descriptive statistics on the expressive and receptive language abilities of the participants, as determined by the Clinical Evaluation of Language

Functions (CELF), were compared to provide an overview of the participants' general language abilities. These results are summarized in Table 4.5.

Table 4.5: Language abilities of the participants *(n=15).*

Language ability	Mean	Suggested mean for Grade 4	Standard deviation	Minimum	Maximum	Median
Receptive language	62.8	77.68	10.4	44	80.7	65.7
Expressive language	47.5	43.18	12.2	28.5	70	47

Even though the participants' mean (62.8%) for their overall receptive language abilities was lower than the suggested mean (77.68%) for Grade 4 (Semel & Wiig, 1980), their mean for expressive language (47.5%) was higher than the suggested mean of 43.18% (Semel & Wiig, 1980).

It is noteworthy that the participants' expressive language abilities were better than their receptive language abilities since generally receptive abilities are superior to expressive abilities (Hoff, 2005; Nippold, Scott, Norris, & Johnson, 1993; Owens, 2001). Often an ELoLT learner can cope with interacting on a functional and social level, but their fundamental understanding of the language of mutual understanding is poor, as was verified by the findings of this study (Le Roux, 2005; Owens, 2001).

4.4 PHONOLOGICAL AWARENESS SKILLS

***Addressed sub-aim*:** To determine the participants' phonological awareness skills in English, by using the Phonological Assessment Battery (PhAB) (Frederickson et al., 1997).

The results of the descriptive statistics of the participants' phonological awareness skills as determined by the Phonological Assessment Battery (PhAB) (Frederickson et al., 1997) are presented in Table 4.6.

Table 4.6: Participants' results on the Phonological Assessment Battery (PhAB) (Frederickson et al., 1997).

Sub-test	Mean (between 0-130)	Level of performance (Below Average= <70-85; Average= 86-114)	Standard deviation	Median	Minimum (between 0-130)	Maximum (between 0-130)
Fluency (Alliteration)	102	Average	10.73	104	72	114
Fluency (Semantics)	95	Average	11.3	94	76	118
Non-word reading	94.5	Average	8.4	97	77	112
Naming speed: Digits	90.7	Average	11.3	89	75	110
Alliteration	88.3	Average	13.1	92	69	100
Spoonerisms	86.5	Average	13.8	87	69	119
Rhyme	80.1	Below average	9.9	77	69	99
Naming speed: Pictures	77.3	Below average	8.6	79	69	97
Fluency (Rhyme)	74.4	Below average	8.8	69	69	94

As depicted in Table 4.6, below average means were obtained in the following sub-tests: *Rhyme, Naming speed: Pictures,* and *Fluency: Rhyme.* The results of the phonological awareness skills *Alliteration, Spoonerisms, Non-word reading, Naming speed: Digits, Fluency: Alliteration,* and *Fluency: Semantics* manifested on an average level of performance for Grade 4 (Frederickson et al., 1997).

The participants found the alliteration tasks easy to complete, as reflected by their above average score of 88.3 (Frederickson et al., 1997). This is in accordance with the literature (Ball, 1993) stating that this ability is at the elementary end of the continuum of development of phonological awareness, and is described as the most basic phonological awareness skill (Ball, 1993). However, the participants struggled with tasks relating rhyme where they attained a below average score of only 80.1 (Frederickson et al., 1997). In monolingual children rhyme (together with alliteration) is described as a basic phonological awareness skill (Ball, 1993; Adams, 1990). The

results of this study, however, rather substantiate the findings of local studies that found rhyming activities to be difficult for ELoLT learners (Haarhoff, 2001; McCord; 2000).

Table 4.7 compares the order of proficiency found in international literature, a local study and the current study (the indicated order is descending, with 1 indicating the highest degree of proficiency).

Table 4.7: Order of proficiency in phonological awareness skills.

International literature (Adams, 1990; Ball, 1993) (Monolingual populations)	**Local study (McCord, 2000)** (Grade 1-learners in a multi-lingual context)	**Current study** (Grade 4-learners in a multi-lingual context)
Rhyme (1)	Alliteration (1)	Alliteration (1)
Alliteration (2)	Rhyme (2)	Substitution Spoonerisms) (2)
Substitution (3)	Substitution (3)	Rhyme (3)

In this study the participants' development of rhyme in ELoLT lags behind compared to rhyme development in children reported in international literature. A possible explanation is that rhyme does not appear in the African languages as it is found in first language English speaking cultures (Naudé, 2005; McCord, 2000). Exposure to rhyme of the participants in this study – many of whom appeared to use English in the classroom situation as LoLT only – might have been limited. On the other hand, the repetitive nature of sounds in neighboring words (alliteration) in traditional African songs may explain the good performance of the participants in alliteration tasks (Naudé, 2005; McCord, 2000). In this regard the participants' skills in their first language might have been transferred to English, thus enabling them to achieve the high score of 102 (Table 4.6) in the subtest *Fluency: alliteration.* The participants were required to provide words starting with the sound [m]. The participants offered a few words in English, but in the majority of cases presented traditional African names e.g. *Moses*, *Mpho, Mandla, Msweni*, and *Mdaka*.

The participants' performance on the sub-test *Spoonerisms* was on an age-appropriate level with a score of 86.5 (Frederickson, et al., 1997). Spoonerisms involve the processes of analysis, substitution and synthesis (Frederickson, et al.,

1997). This section was divided into two parts: Part 1 used semi-spoonerisms: participants were asked to replace the first sound of a word with another sound to produce a word of different meaning (e.g. changing *cot* to render *got*). Part 2 used full spoonerisms: participants were asked to exchange initial sounds in two words (e.g. *sad cat* to produce *cad sat*). Although the participants' score in this sub-test was on par with the suggested average (Frederickson et al., 1997), most of the participants were able to complete only Part 1 (semi-spoonerisms), and struggled with Part 2.

The participants scored better (86.5) (Table 4.6) in Part 1 of the section Spoonerisms (which in effect implies the substitution of one sound with another*)* than in the rhyming tasks (*Rhyme* 80.1 and *Fluency: rhyme* 74.4*)* (Table 4.6) of the PhAB (Frederickson et al., 1997). This finding is contrary to the findings of McCord (2000) where the participants scored higher in the rhyming than in substitution activities. The explanation for this apparent discrepancy probably lies in the age difference between the two groups of participants in question – McCord (2000) selected Grade 1-learners, whereas the participants in the current study were Grade 4-learners. Spoonerisms require complex skills in phoneme manipulation and develops with formal schooling in reading and spelling (Ball, 1993). This concurs with the findings of Swank (1990) who mentioned two stages of phonological awareness: The fist stage occurs before formal reading instruction is instituted – as found in the Grade 1-participants in the study of McCord (2000), whilst the second stage of phonological awareness develops as a result of learning to read (Swank, 1990). The better performance in of the participants in the current study compared to the participants in the McCord study (2000) can thus be attributed to the longer period of exposure of the participants in the current study to reading and spelling instruction.

The participants' mean score of 94.5 (Table 4.6) in the sub-test *Non-word reading* was found to be on an age-appropriate level (Frederickson et al., 1997). This result is conspicuous when compared to the participants' reading abilities. It is possible that their reading ability of non-words was on this (unexpected) age-appropriate level due to the presentation of single, uncomplicated, easy to comprehend units. Some mistakes did occur in instances of first language influence on the pronunciation of the non-word items (Le Roux, 2005).

The mean score of 90.7 (Table 4.6) for the sub-test *Naming speed: Digits* was on an average level (Frederickson et al., 1997), whilst the score of 77.3 (Table 4.6) for the sub-test *Naming speed: Pictures* was below average (Frederickson et al., 1997). The sub-test *Naming speed: Digits* required the implementation of automatic expression, not requiring any understanding by the participants of the digits presented. Only visual identification and verbal production of the digits were required. As this type of activity is part of the rote learning activities in the class, the participants were familiar with the required activity. The fact that the score for *Naming speed: Pictures* was below the suggested average (Frederickson, et al., 1997) can possibly be ascribed to the fact that most of the participants are from low socio-economic communities which might have lead to limited exposure to pictures and activities involving pictures (Hennop, 2004). Also, the participants might not have been familiar with activities where pictures constituted the only input, with no verbal facilitators. Limited exposure to pictures and activities involving pictures may have contributed to this below average score.

The results discussed above clearly indicate three sub-tests (namely *Rhyme, Naming speed: Pictures,* and *Fluency: Rhyme*) where participants' scores were below average. On this grounds the participants' phonological awareness skills can be described as poor. Frederickson et al. (1997) states that when learners score below average on three of the PhAB sub-tests, such learners are to be considered as presenting with severe problems in the area of phonological awareness skills.

4.5 READING ABILITIES

***Addressed sub-aim*:** To determine the participants' level of reading ability in English by using informal tests designed by the researcher.

The results regarding the participants' reading abilities in English are presented below in terms of the analysed aspects, namely reading decoding and reading comprehension.

4.5.1 Participants' reading decoding abilities

The participants' reading decoding abilities were rated on the basis of the number of decoding errors and scored on a scale that was jointly developed by two statisticians

and the researcher (Appendix I) (Louw & Sommerville, 2004). The reading decoding levels for the participants are presented in Appendix M.

The types of decoding errors and the number of participants that made these errors, are listed in Table 4.8.

Table 4.8: Participants' decoding errors.

Decoding errors	Number of participants evidencing the error *(n=15):*	Percentage of participants evidencing the error
Misread words	13	86.7%
Omitted words	10	66.7%
Guessed words	8	53.3%
Repeated words	8	53.3%
Ignored punctuation	7	46.7%
Non-fluent, word-by-word reading	7	46.7%
Showed poor word recognition	3	20%
Sounded, the word, but could not pronounce it.	2	13.3%
Sounded the words	1	6.7%

According to Table 4.8, the most salient decoding errors of the participants were the misreading of words (86.7%), omission of words (66.7%), guessing of words (53.3%), repeating of words (53.3%), ignoring of punctuation (46.7%), and the separate reading of words (46.7%).

The number of decoding errors as listed in Table 4.9 was added together to arrive at a rating for the reading decoding level of the participants as *Good*, *Average*, *Poor,* or *Very poor*.

Table 4.9: Reading decoding level of each participant *(n=15).*

Reading decoding ratings			Participant number
Performance level	**Number of decoding errors**	**Percentage of participants**	
Good	2	33%	5
	2		6
	2		7
	2		13
	2		15
Average	4	47%	1
	5		3
	3		4
	3		8
	4		9
	5		10
	4		14
Poor	6	13%	11
	6		12
Very poor	10	7%	2

According to Table 4.9 only 33% of the participants can be considered as being good readers who are able to use reading decoding when reading a given passage, and based on this finding it can be inferred that the remaining 67% of the participants experienced difficulties in the domains of CALP (which include both their oral and written language) (Broom, 2004) and that these difficulties may have a direct negative effect on their academic performance (Broom, 2004; Owens, 2001).

Of the participants, 33% (Table 4.9) were described as being on the *instructional level* (Pretorius, 2002) of reading (*Good* in the current study). The remaining 67% (Table 4.9) of the participants were described as being on the *frustration level* of reading (*Average, Poor,* or *Very poor* in the current study) since they read with less than 90% decoding accuracy (Pretorius, 2002; Lesiak & Bradley-Johnson, 1983). Considering the participants' level of reading decoding, their reading abilities were not viewed as

adequate for academic progress and they were judged to be candidates for additional reading instruction with the aim to improve their reading level (Devine, 1988).

The obtained results can be explained by a number of possible factors. Firstly, one of the principles of OBE is that reading is not instructed on a formal level, but that it should happen incidentally (Broom, 2004; Muter & Diethelm, 2001). Though it was not focused upon in the current study, some of the participants may have been from backgrounds where little or no attention is given to the development of the pre-literacy skills which are important predictors of later success in reading (Carrol, Snowling, Hulme, & Stevenson, 2003; Catts, 2001).

Judged by the type of mistakes the participants in this study made it is clear that, as a group, they experienced word attack as difficult – they were at a loss when confronted by a new word. Phoneme-grapheme relationships were not developed to a level where they knew what the graphic representation of a specific phoneme was. This underdeveloped ability was conspicuous in their spelling skills. Inadequacy in these skills have a detrimental effect on performance in tasks requiring reading decoding and this inadequacy will lead to poor general reading abilities (Durgunoglu, 2002).

In this study, the participants were familiar with the passage used for the required reading task as the researcher selected a curriculum-based passage from the participants' Grade 4 reader. Tractenberg (2002) concluded that memory plays an important role in the reading success of an individual but, in this study, difficulty in reading decoding was still present despite the fact that the participants were familiar with the passage. Research findings strongly suggest that insufficient awareness of the phonological structure of spoken words is associated with poor reading abilities (Muter & Diethelm, 2001; Porpodas, 1999). This should be taken into consideration as a possible explanation for the poor reading abilities identified in this study.

The participants' poor results regarding the correct use of punctuation marks (Table 4.8) may be linked to their poor phonological awareness skills regarding grapheme-phoneme relationships (Carroll & Snowling, 2004). Proper decoding of punctuation marks in written language will lead to appropriate supra-segmental changes in the

verbal rendition of the printed text (Durgunoglu, 2002; Boone & McFarland, 1994). This skill proved to be absent in this study.

4.5.2 Participants' reading comprehension abilities

Multiple choice-questions, designed by the researcher (Appendix H), were used to determine the participants' reading comprehension. The pertaining results are summarised in Table 4.10.

Table 4.10: Reading comprehension abilities.

Reading comprehension score	Number of participants (n= 15)	Percentage of participants
10/10	9	60.00%
9/10	4	26.70%
8/10	0	0.00%
7/10	1	6.70%
6/10	0	0.00%
5/10	1	6.70%
4/10	0	0.00%
3/10	0	0.00%
2/10	0	0.00%
1/10	0	0.00%
0/10	0	0.00%

The high scores obtained in the reading comprehension test can be attributed to the fact that the participants were familiar with the content of the passage (as mentioned under 4.5.1.). These scores can therefore not be considered as representative of their true reading comprehension abilities since memory probably played a significant role in the outcomes (Tractenberg, 2002). The use of multiple-choice questions could have lead to participants' guessing the correct answer. Furthermore, these questions were straightforward, posing a relatively low linguistic demand (Geva, 2000).

It is important to note that there is no correlation between the results of the decoding and comprehension abilities of the participants. Literature related to these skills

indicates a learner's decoding skills will determine his/her comprehension skills (Owens, 2001; Pretorius, 2002; Liberman; Hacquebord, 1994; Schankweiler & Liberman; 1989), but in this study the participants' comprehension abilities were better than anticipated when compared to their decoding skills. These results can be explained by considering the type of questions that were asked to determine reading comprehension skills. These questions only addressed content or literal comprehension and higher order comprehension of language received limited attention (Pretorius, 2002). The questions were designed to correspond to the type of questions that are used in the school system. The school system does not concentrate on questions which require higher order, inferential strategies (Pretorius, 2002; Solarsh, 2002). Because the researcher read the questions to the participants the questions focused on the oral mode (Broom, 2004) of information transmission (Solarsh, 2002), on rote-learning and the verbatim recall of information (Pretorius, 2002). This may be possible explanations for the participants' higher than expected scores on the comprehension test.

Because the participants in this study receive their schooling in a language that is not their first, it may be assumed that the learners' limited reading comprehension skills have their origin in limited general language proficiency and that this limitation may have impacted negatively on academic performance (Pretorius, 2002).

4.6 SPELLING ABILITIES

***Addressed sub-aim*:** To determine the participants' spelling ability in English by using an informal test designed by the researcher.

The participants' spelling was evaluated through an informal test designed by the researcher. A selection of words from the participants' spelling list used in Grade 4 was compiled to ensure that the spelling test was curriculum based (See appendix J). Examples of incorrectly spelt words and analysis of the spelling mistakes are illustrated in Table 4.11.

Table 4.11: Spelling mistakes and analysis of the mistakes

Target word	Participant number	Error	Analysis
Adventures	2	*Advertureds*	Substitution of the 'n' with the 'r'-grapheme
	3	*Adveches*	Substitution of the 't' with the 'ch'- grapheme
	10	*Adventsas*	Substitution of the 't' with the 'ts'-grapheme
	11	*Adeventured*	Addition of the 'e-grapheme
	12	*Adveacurs*	Substitution of 'nt' with the 'a'-grapheme
Highway	10	*Highwy*	Deletion of the 'a'-grapheme
	13	*Hogway*	Substitution of the 'i' with the 'o'-grapheme
Improvements	2	*Im…*	Word too complex
	12	*Improufmenst*	Substitution of the 'v' with the 'u'-grapheme and exchange of the 'ts' with the 'st'-grapheme
	13	*Improvments*	Deletion of the 'e'-grapheme
	14	*Improvemeets*	Substitution of the 'n' with the 'e'-grapheme
Introduced	2	*In-*	Word too complex
	3	*Intiduted*	Deletion of the 'r' and the substitution of 'c' with a 't'-grapheme
	5	*Inroduced*	Deletion of the 'd'-grapheme
	8	*Introduecd*	Addition of the 'e'-grapheme
	9	*Introduct*	Omission of the 'e'-grapheme
	10	*Idradust*	Omission of the 'n' and 't'-grapheme and substitution of the 'ced'-graphemes with the 'st'-graphemes
	11	*Intredes*	Substitution of the 'o' with an 'e'-grapheme and the 'u' with an 'e'-grapheme and substitution of the 'uc' with the 'es'-graphemes
	12	*Introguse*	Substitution of the 'd' with the 'g'-grapheme and the 'c' with the 's'-grapheme
	13	*Inroduced*	Omission of the 't'-grapheme
Seashore	11	*Seeshore*	Substitution of the 'a' with the 'e'-grapheme
	13	*Seoshore*	Substitution of the 'a' with the 'o'-grapheme
	14	*Seashor*	Deletion of the 'e'-grapheme
Skilful	3	*Skulful*	Substitution of the 'i' with the 'u'-grapheme
	12	*Skulful*	Substitution of the 'i' with the 'u'-grapheme
Supported	1	*Suported*	Omission of the 'p'-grapheme
	2	*Suppontend*	Substitution of the 'r' with the 'n'-grapheme and addition of the 'n'-grapheme
	3	*Sepoted*	Substitution of the 'u' with the 'e'-grapheme, omission of the 'r'-grapheme
	10	*Sappoted*	Substitution of the 'u' with the 'a'-grapheme, omission of the 'r'-grapheme
	13	*Saported*	Substitution of the 'u' with the 'a'-grapheme, omission of the 'p'-grapheme

Target word	Participant number	*Error*	Analysis
Tideless	10	*Tidelese*	Substitution of the 's' with the 'e'-grapheme
	11	*Teddeless*	Substitution of the 'i' with the 'e'-grapheme and an addition of a 'd'-grapheme
	13	*Tiddes*	Addition of a 'd'-grapheme and a deletion of the 'les'-graphemes
Ventured	3	*Venched*	Substitution of the 't' with the 'ch'- grapheme
	10	*Ventude*	Substitution of the 'r' with the 'd'-grapheme and the deletion of the 'd'-grapheme
	12	*Venched*	Substitution of the 't' with the 'ch'-grapheme
	2	*Voyeges*	Substitution of the 'a' with the 'e'-grapheme
	6	*Voyeges*	Substitution of the 'a' with the 'e'-grapheme
	10	*Vayeges*	Substitution of the 'o' with the 'a'-grapheme and the 'a' with the 'e'-grapheme
	11	*Veggas*	Omission of the 'oya'-graphemes and addition of the 'eg'-graphemes
	12	*Vogyse*	Deletion of the 'ya'-graphemes, substitution of the 'e' with the 'y'-grapheme and addition of the 'e'-grapheme
	13	*Voyagas*	Substitution of the 'e' with the 'a'-grapheme

As seen from the examples of incorrectly spelled words and the analysis of the mistakes in Table 4.11, twelve of the participants used substitutions, omissions, deletions and additions of letters in their spelling attempts.

Many factors may have influenced the spelling abilities of the participants and may range from mother tongue influence (Makalela, 2002), the opaqueness of English (Seeff & Jordaan, 2000), the phonological context, poor phonological awareness skills, and the instruction in the classroom.

As seen in Table 4.11, the participants' mother tongue appeared to influence the spelling of the words. As English is not the learners' first language they were obliged to spell in a language alien to them. The participants created new rules in order to make sense of spelling. They chose a specific grapheme to represent a series of phonemes (e.g. *venched*). When a specific sound can be represented by two or more graphemes, some of the participants selected one grapheme to represent a combination of graphemes.

The participants did not implement the correct spelling rules, but created rules that were easier to apply and that in all probability made more sense to them. This may be due to the complexities (sometimes referred to as 'opaqueness' of the English spelling system (Seeff & Jordaan, 2000). (One example illustrating this complexity is found when one ponders the spelling of the English word *fish,* pronounced [fɪʃ] – but consider the forms *enough,* where 'gh' is pronounced [f], *women*, where 'o' is pronounced [ɪ], and *national* where 'ti' is pronounced [ʃ]. In the light of these examples an enterprising novice may very well write down 'ghoti' when asked to spell *fish*!) (Tesner, 2005).

A further possible explanation for the participants spelling errors is that the phonetic context has an influence on spelling. The phoneme are not represented by the correct grapheme, correct, but spelled, almost 'phonetically', according to what the participant perceives on an auditory level (e.g. *ventured*: *venched,* which is not surprising, because the sound/phoneme [tʃ] is often spelled as 'ch' in words like *chat, chop, chew* and many more). The results revealed that the participants spelled words the way they heard them, without application of spelling rules. It seems, from these results almost certain that the participants' spelling is negatively impacted by their poor phonological awareness skills in English. This corroborates the ideas of, among others, Van Kleeck et al., (1998); Larrivee and Catts, (1999), and Hodson, (1998). The above explanations are clearly to be found within the learners themselves, *but* instruction in the classroom (an external influence) may also be an important factor that negatively impacts on spelling ability. For instance, the learner was taught that words like *chop*, *chips*, *chocolate*, and so forth are spelled with 'ch'. It stands to reason that learners having been taught the above, may assume that the [tʃ] in words like *venture, tune,* and the like will be spelled accordingly, using the grapheme combination 'ch'. Most learners are not actually taught to spell, and spelling happens 'incidentally'.

4.7. CORRELATIONS BETWEEN PARTICIPANTS' ABILITIES IN PHONOLOGY, LANGUAGE, READING, SPELLING, AND PHONOLOGICAL AWARENESS SKILLS

***Sub-aim addressed*:** To determine correlations between the participants' phonology abilities, language abilities, phonological awareness skills, reading abilities, and spelling abilities by using the Mann-Whitney Test and the Spearman Correlation Coefficient (Louw, 2005; Anderson, et al., 2003; Keller & Warrack, 2000).

Analysis of the data obtained from the participants' scores on the various assessments, rendered a number of interesting relationships between the participants' performance on the different tests (Table 4.12). The parametrical *Mann-Whitney Test* (Keller & Warrack, 2000) and the non-parametrical *Spearman Correlation Coefficient* (Keller & Warrack, 2000) were used to determine whether significant correlations exist between the different abilities and phonological awareness skills of the participants (Louw, 2005; Anderson et al., 2003; Keller & Warrack, 2000). A *p*-value was calculated to determine whether there was a significant correlation between a specific ability and the participants' phonological awareness skills (Louw, 2005).

Statistical analysis of the findings (Appendix O) revealed a range of statistically significant and statistically insignificant correlations. These are reflected in Table 4.12.

Table 4.12: Correlations between the participants' phonological abilities, language abilities, phonological awareness skills, reading abilities, and spelling abilities.

PhAB-subtests	Statistical method: Mann-Whitney Test (MWT) or Spearman Correlation Coefficients (SCC):					
	MWT	SCC	SCC	MWT	SCC	SCC
	Phonology	Receptive language	Expressive language	Reading decoding	Reading comprehension	Spelling
Alliteration	0.4638	0.4258	0.4926	0.1705	0.9092	0.516
Rhyme	0.2006	0.5872	0.5391	0.2174	0.8023	0.0803
Spoonerisms	0.0551	0.0119	0.0314	0.0204	0.5400	0.0051
Non-word reading	0.1447	0.4433	0.2070	0.0495	0.8443	0.6939
Picture naming	0.1348	0.1045	0.0219	0.3706	0.8785	0.1566
Digit naming	0.1176	0.1103	0.0205	0.0509	0.4297	0.0542
Alliteration fluency	0.1314	0.4038	0.0131	0.3110	0.4141	0.9456
Rhyme fluency	0.1276	0.2508	0.2032	0.1951	0.5518	0.0157
Semantic fluency	0.6398	0.2779	0.3223	0.8268	0.9913	0.7827
Combination of sub-tests	0.0279	0.0284	0.0103	0.0304	0.9598	0.0358

Key: No Correlation Noteworthy Correlation

Table 4.13 shows the correlations drawn between phonology ability and the different sub-tests of the *Phonological Awareness Battery* (Frederickson et al., 1996). This is in compliance with literature which states that the phonological abilities of a learner may have an influence on the phonological awareness skills of that learner (Carol, Snowling, Hulme & Stevenson; 2003; Rvachew, Ohberg, Grawburg & Heyding, 2003; Bird & Bishop, 1995).

It is important to note that the correlation between phonology and spoonerisms rendered a *p*-value of 0.0551 which, while close to the cut-off line, cannot be regarded as significant.

4.7.2 Correlations between language abilities and phonological awareness skills of participants

The correlation between receptive language abilities and phonological awareness skills on the one hand, and between expressive language abilities and phonological awareness skills on the other, were determined. The findings are discussed below.

4.7.2.1 Correlations between phonological awareness skills and receptive language abilities of participants

From Table 4.12 it is clear that there were significant relationships (both the *p*-values were found to be between 1% and 5 %) between the participants' receptive language abilities and spoonerisms, and the participants' receptive language and their overall phonological awareness skills. All the other results showed a *p*-value of greater than 5%, and therefore were not statistically significant.

It is seems clear that if a participant's language abilities are not on an age-appropriate level, that participant's phonological awareness skills will also not be age-appropriate. This is in accordance with literature that states that the participants' understanding of language is linked to phonological awareness, which is a predictor of the development of literacy (Catts, 1993; Bishop & Adams, 1990). These findings show how vitally

important an improvement in the level of language development in English is for these participants from a multi-cultural, multi-lingual society, but with ELoLT.

4.7.2.2 Correlations between participants' phonological awareness skills and their expressive language abilities

In Table 4.12 it is important to note that there are four PhAB-subtests (*Spoonerisms, Picture naming, Digit naming,* and *Alliteration fluency*), and general phonological awareness skills that show significant correlations with expressive language. All the other results showed a *p*-value of greater than 5%, and were not statistically significant.

As previously stated in regard to receptive language, it is clear that language development and phonological awareness skills will influence each other. Poor language development provides a poor basis for the development of higher meta-linguistic skills such as those of phonological awareness (Cooper, Roth, Speece & Schatschneider; 2002).

4.7.3 Correlations between participants' reading abilities and phonological awareness skills

Correlations between the participants' reading decoding and reading comprehension abilities and phonological awareness skills were determined (Table 4.12) and are discussed below.

4.7.3.1 Correlations between participants' reading decoding abilities and phonological awareness skills

As seen in Table 4.12, there is strong evidence of correlations between the participants' spoonerisms and reading decoding abilities, the participants' non-word

reading and reading decoding abilities and between the participants' reading decoding and general phonological awareness skills (PhAB). The correlations between these variables are verified by the *p*-value of between 1% and 5 % (between 0.02 and 0.05). These results confirm research findings which state that phonological awareness will determine the success of reading decoding (Catts, Fey, Zhang, & Tomblin, 1999; Larrivee & Catts, 1999; Hodson, 1998; Scarborough, 1998; Van Kleeck, Gillam, & McFadden, 1998; Magnusson & Naucler, 1990).

All the other results showed a *p*-value of greater than 5%, and are therefore not statistically significant. It is important to note that the correlation between reading decoding and digit naming scored a *p*-value of 0.0509, which renders this relationship not significant.

4.7.3.2 Correlations between participants' reading comprehension abilities and phonological awareness skills

In terms of these correlations it is interesting that all the *p*-values were greater than 5%. This indicates that there was no significant relationship between the scores in the sub-tests and reading comprehension (Table 4.12). This is contrary to research that has shown that phonological awareness skills are the single best predictor for reading success (Roth & Baden, 2001; Larrivee & Catts, 1999; Scarborough, 1998; Van Kleeck, Gillam & McFadden, 1998). The fact that there is no significant correlation between the participants' reading comprehension and phonological awareness skills may be due to the shortcomings in the informal reading test designed by the researcher (3.6. and Appendix H). These results cannot be seen as accurate enough to be generalised to the broader population.

4.7.4 Correlations between participants' spelling abilities and phonological awareness skills

Table 4.12, reflects a highly significant correlation between the participants' spoonerisms and spelling abilities, since the *p*-value is less than 1%. There is a strong evidence that there are correlations between the participants' rhyme fluency

and spelling abilities and their spelling and general phonological awareness skills –a *p*-value of between 1% and 5 % (between 0.02 and 0.05) were determined, indicating that spoonerisms, rhyme fluency and general phonological awareness skills may play a role in spelling success.

All the other results showed a *p*-value of greater than 5%, indicating no statistical significance.

The above discussion shows strong evidence that correlations can be drawn between the participants' phonological awareness skills and phonological abilities, between phonological awareness skills and receptive and expressive language, between phonological awareness skills and reading decoding abilities, and also between phonological awareness skills and spelling abilities. This corroborates with literature (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998; Clarke-Klein & Hodson, 1995; Magnusson & Naucler, 1990).

4.8 SUMMARY

In Chapter 4 the results were discussed for each sub-aim specified for the study. The results were presented in figures and tables, and discussed and compared to the current body of knowledge on phonological awareness skills of the learner in a multi-cultural, multi-lingual context with ELoLT.

From the results it is clear that approximately half of the participants evidenced consonant variations in their production of target words and all the participants evidenced vowel variations. Regarding the participants' receptive and expressive language abilities their BICS language abilities were appropriate, but the development of their language abilities to the level of CALP's, were not age-appropriate. The results obtained regarding the participants' phonological awareness skills were below average and could be correlated with their language abilities. Reading decoding results were not age-appropriate but reading comprehension was on an age-appropriate level. This last finding can, however, be explained by a methodological error in terms of the data-collection instrument designed for this specific part of the

study (3.6 and Appendix H). Spelling abilities were not on an age-appropriate level and these findings can be explained by a number of factors, as discussed earlier in this chapter. In the final section of this chapter the results were discussed in terms of statistical correlations between them.

4.9 CONCLUSION

By conducting research on learners in the multi-cultural, multi-lingual South African context, new insights were gained into these learners' phonological, language, reading, and spelling abilities, and their phonological awareness skills. These results showed the urgent need for more research in the field of multi-cultural, multi-lingual contexts as is found in South Africa. The results highlighted the challenges which confront these learners within the OBE system, and the important role of the speech-language therapist in this setting.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Chapter aim: This chapter aims to draw conclusions from the results obtained in the study. The method as well as findings relevant to this research is critically evaluated, the clinical implications are discussed, and recommendations for continued research are stated.

5.1 INTRODUCTION

"Subjective belief must be checked against objective reality."

(De Vos, et al., 2005:45).

Research, within a profession such as Speech-Language Pathology, offers in the unique opportunity to lay scientific foundations through identifying possible generalisations from experiences of professionals in clinical practice on a daily basis (De Vos, et al., 2005). The aim of applied clinical research, as in the case of this research project, should be the improvement in the quality of service to clients, because it is newly acquired knowledge that may empower speech-language therapists to improve their service through application of this knowledge in their service delivery. Through the progressive improvement of knowledge, effective and efficient service delivery is enhanced and ethical service delivery is promoted (HPCSA, 2005).

Ethical and effective service delivery within the South African context needs to focus on areas where the speech-language therapist needs to provide intervention within a multi-cultural and multi-lingual context, since the majority of South African learners are functioning in this context. The results of the current study address an urgent need in clinical practice within the South African context because it provides an important expansion of knowledge in the field of phonological awareness, which is considered to be the most important predictor of later reading and spelling success (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998).

The results of research projects such as this one should lead to a better understanding of the challenges that confront the speech-language therapist in intervention with a learner in the multi-cultural, multi-lingual South African context. Improvement in the application of the speech-language therapist's skills in collaboration, prevention, assessment, and intervention with the learner in the OBE system may, at least in part, be enhanced by findings of this research study (Roth & Baden, 2001). The results of the present study provide insight into context-appropriate clinical application of speech-language therapy. Such improvement may benefit many Black children being educated in English as Language of Learning and Teaching (ELoLT) in South Africa by improving their literacy skills, their academic performance levels, and their prospects for further education and training.

Based on the results of this research project, conclusions were drawn and certain recommendations were made. These should be of a practical nature in order to be utilised maximally in clinical practice (De Vos, et al., 2005). With this perspective, this chapter presents the conclusions, recommendations for future researchers, a critical evaluation of the study, clinical implications of the results, and suggestions for future research.

5.2 CONCLUSIONS

This description of the effect of a multi-cultural and multi-lingual context on the English phonological awareness skills of a selected group of Black grade 4-learners in a primary school setting in South Africa was made possible by the correlations determined between the phonological abilities, expressive and receptive language abilities, reading, and spelling abilities, and the phonological awareness skills of the participants in ELoLT. Based on the results of this study, the researcher came to the conclusions presented below.

Firstly, the participants' phonological skills in English as LoLT showed that 47% of the participants produced the target consonants with a consonant approximation, and vowel approximations were produced by all of the participants in single words. These results were attributed to a number of factors, namely the characteristics of BSAE

(Makalela, 2004), the influence of the learners' first language on the pronunciation of the words of BSAE (Bernthal & Bankson, 2004; Goldstein & Iglesias, 2004; Makalela, 2002; Van Rooy, 2002), the fact that English is an additional language of the participants (Bland-Steward, 2005; Makalela, 2004; Van der Walt & Van Rooy, 2002), as well as to the relatively limited vowel inventories of the different African Language Families (ALF) (Jones & Mollema, 2005; Wissing, 2002; Lanham, 1967).

The participants' phonological skills differed from the South African English norm. According to literature, there is a known relationship between a learner's phonological abilities and his/her phonological awareness skills (Carol, Snowling, Hulme & Stevenson; 2003). These findings indicate that, in this group of learners with ELoLT, their phonological abilities and its impact on their phonological awareness skills should be taken into account by speech-language-therapists working in the multi-cultural, multi-lingual context of South Africa.

Secondly, the participants' expressive and receptive language abilities in English as their LoLT showed that their expressive language abilities were more advanced as compared to their receptive language abilities. Generally, receptive language abilities are more advanced than expressive language abilities, since language development in a child shows that a concept has to be established before the child will correctly use the word that refers to the concept (Hoff, 2005; Owens, 2004). It was concluded that the participants were able to cope and interact linguistically on a functional and social level, but that their basic understanding of ELoLT was poor (Le Roux, 2005; Owens, 2004). The participants' limited vocabulary in English may possibly be ascribed to limited language stimulation in English. These participants appeared to cope well with phrases and other language structures that have a high frequency of use in colloquial language (BICS), but when demands of an academic kind were made on their LoLT; they were mostly unable to meet those demands, probably due to inadequacies in their cognitive academic language proficiency (CALP). The implicit differences that exist between the African languages and English (Seeff & Jordaan, 2000), and the intrinsic oral culture associated with African languages (Le Roux, 2005; Le Roux 2004) were also viewed as contributing to the results obtained related to participants' language abilities.

Since phonological awareness is a component of meta-linguistics, which develops because of language use on a higher cognitive level (Goldsworthy, 2001), it is clear that poor language abilities will lead to poor phonological awareness skills. From these results it appeared that a multi-lingual context possibly influenced the participants' competency in ELoLT. Furthermore, the significant discrepancies found in the language abilities of the participants in this study could possibly be ascribed to the fact that the tests that were used were originally designed for English first language speakers and, consequently, it cannot be taken for granted that they may be successfully implemented for the evaluation of learners with ELoLT where English is not their first language. Also, the participants in this study come from diverse cultural backgrounds, compounding the issue of culturally relevant testing.

In order to improve the phonological awareness skills of learners in the multi-cultural, multi-lingual South African OBE system, the speech-language therapist has to aim at improving the general language skills in the LoLT to a level where it will be age-appropriate. Until then it cannot be expected that these learners' phonological awareness skills in English would develop to an age-appropriate level.

Thirdly, the participants' phonological awareness problems were evidenced by their below average scores on three of the PhAB-subtests, namely *Rhyme*, *Naming speed: Pictures* and *Fluency: Rhyme*. Based on the PhAB manual (Frederickson, et al., 1997) these results were rated as a severe impairment in phonological awareness. The results substantiated those of other local studies that found that rhyming activities were difficult for EAL-learners, and that alliteration tasks, on the other hand, were easier (Haarhoff, 2001; McCord; 2000). The participants evidenced delayed rhyme development in ELoLT compared with the developmental norms stated in the literature concerning English first-language speakers. This may be attributed to the fact that rhyme does not appear in the African languages in the same way as in English. The above-average performance of the participants in alliteration tasks in this study were explained by the repetitive nature of sounds in neighbouring words in traditional African songs (Le Roux, 2005).

The EAL speaking participants' below average phonological awareness skills are regarded as having a negative impact on future academic success, since phonological

awareness is the single best predictor of successful reading and spelling development (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, McFadden, 1998).

The different order of development of the participants' phonological awareness skills (when compared to the development of phonological awareness skills in English) must be taken into consideration when working with a learner in the South African multi-cultural, multi-lingual educational context. This implies that the current school system, as well as speech-language therapists, should provide opportunities for these learners to improve their phonological awareness skills in a manner which takes their cultural background into account. Such consideration should enable these learners to reach their full academic potential.

Fourthly, the participants' level of reading ability was evaluated in terms of their reading decoding and reading comprehension abilities. The decoding results showed that only one third of the participants could be considered to be readers of an average standard, whilst the remainder of the participants struggled to implement their reading decoding abilities in the academic setting (Broom, 2004; Owens, 2001). These poor reading skills were attributed to the strategy within OBE where reading is not instructed on a formal level, but is assumed to develop 'incidentally' (Broom, 2004; Muter & Diethelm, 2001) and also to the fact that pre-literacy skills, which are important predictors of later reading success (Carrol, Snowling, Hulme, & Stevenson, 2003; Catts, 2001), may not have been adequately developed. It was noted that the high scores obtained in the reading comprehension-section could not be seen as a true reflection of the participants' reading comprehension abilities, because they were familiar with the content of the passage they were required to read (memory probably played an important role as well). The researcher's use of multiple-choice questions may also have contributed to the high score on the reading comprehension test (Tractenberg, 2002).

The reading comprehension abilities of participants were on a lower level compared to those of first language speakers of South African English. Literature has proven that there is a clear relationship between reading abilities and the phonological awareness skills (Van Kleeck, et al., 1998; Larrivee & Catts, 1999; Hodson, 1998). This

relationship was evident in the current study as well, since the participants' reading abilities as well as phonological awareness skills, were found to be poor. This implies that reading instruction in the multi-cultural, multi-lingual school setting should be considered a challenge, and extra assistance from the speech-language therapist is probably required.

In the *fifth place*, the participants' spelling abilities in English as LoLT was not age-appropriate. The spelling abilities of the participants may have been influenced by the learners' mother tongue (Makalela, 2002), the opaqueness of the spelling system of English (Seeff & Jordaan, 2000), the phonological context, poor phonological awareness skills, and by the method of instruction in the classroom. As English was the language of mutual understanding, the participants created new spelling rules in order to make sense of spelling – they did not implement the English spelling rules of South African English, but created their own rules which were easier to apply, resulting in an almost 'phonetic' spelling of words, seemingly prompted by their pronunciation of these words.

The participants' spelling abilities differed from the accepted spelling system of South African English. These results clearly indicated that these learners with ELoLT struggled to spell age-appropriately (or congruent with the required Grade 4 scholastic standard). The improvement of these skills and the teaching of basic general spelling rules in English require the urgent attention of speech-language therapists who provide intervention with learners in the OBE setting that constituted the context for this study.

Lastly, the relationship between the participants' phonological awareness skills on the one hand, and their language, reading, and spelling abilities on the other, was determined. Correlations were drawn between the participants' phonological awareness skills and phonological abilities, receptive and expressive language, reading decoding abilities, and spelling abilities. These results confirm research findings which state that:

- The phonological abilities of a learner may have an influence on the phonological awareness skills of that learner (Carol, Snowling, Hulme & Stevenson; 2003).
- The participants' language abilities are linked to phonological awareness skills, which predict literacy development (Catts, 1993), and poor language development provides a weak basis for the development of the higher meta-linguistic phonological awareness skills (Cooper, Roth, Speece & Schatschneider, 2002).
- The phonological awareness skills of a learner will determine the success of reading decoding (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998).
- The phonological awareness skills of a learner may play a role in spelling success (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998).

The fact that no significant correlation was determined between the participants' reading comprehension and phonological awareness skills was attributed to the fact that, as mentioned already, memory played a role in the results obtained for reading comprehension. Therefore the results for reading comprehension need to be interpreted with caution.

The above correlations highlight the importance of the development of all of these abilities and skills –optimal development of these skills will greatly assist learners in this specific context to realise their full academic potential. Because the abovementioned skills are all integrated, intervention by the speech-language therapist should aim at developing all of them to an age-appropriate level.

In order to determine the relevance of the results of this research, it is important to provide a critical evaluation of the study in terms of its strengths and limitations.

5.3 CRITICAL EVALUATION OF THE STUDY

A critical evaluation of this research is important because it will highlight its strengths and limitations, thereby enabling the speech-language therapist to apply the

knowledge gained from this study in clinical practice where relevant, and also in future associated research projects (HPCSA, 2005).

Through reflecting on the research process the researcher identified certain *limitations* regarding the method used in this study. Reporting on these limitations is important, as it may assist future researchers to improve in researching this topic. The limitations of this study were identified during the research process, accounted for and kept in mind throughout the discussion of the research, thereby limiting, to some degree, overcome their impact on the results. These limitations are discussed below.

- Fifteen participants were selected for the current study. Although purposive sampling was done according to the prescriptions in recent literature (Leedy & Ormrod, 2004; De Vos, 2005), the sample was limited, thus precluding generalisation of the results to larger populations. It is recommended that future researchers select a larger group of participants in order to obtain results that may readily be generalised to the broader population. Such results will be of great assistance for learners similar to those who participated in this study, and in like circumstances, reach their optimal academic potential (Leedy & Ormrod, 2004).

- *The Goldman-Fristoe Test of Articulation* (Goldman & Fristoe, 1986) was selected to evaluate the phonological abilities of the participants on the level of their production of vowels and consonants. However, as the data collection process progressed, it became clear that the participants' vowel productions needed in-depth analysis. This proved to be a problem, since the said test did not target vowel productions. Thus, the implementation of this test for the evaluation of vowels has to be considered inappropriate.

- In order to be able to describe and analyse the consonant and vowel productions of the participants, the researcher relied on the opinion of a panel of listeners. Analysis of the participants' vowel variations was important because vowels, being the most prominent segments of speech, are often indicative of a language variation such as BSAE and had to be taken into account when describing the participants' phonological abilities (Tesner, 2005,

Abercrombie, 1991). However, audio-taped samples of spontaneous speech, which would enable the researcher to conduct a more detailed analysis of the participants' vowels production, are recommended for future research (Bernthal & Bankson, 2004).

- In order to determine the participants' reading comprehension abilities, the researcher selected a curriculum-based passage from the participants' Grade 4 reader. This passage, however, did not provide a true reflection of the participants' reading skills, which led to a discrepancy between the results obtained and the current literature on reading comprehension abilities. The participants performed better than expected when their reading comprehension was compared to their reading decoding results and this can be attributed to the fact that they could recall certain information from memory, as they were familiar with the selected passage. In future research, a curriculum based reading book can still be used but it is recommended that a passage on the same level of reading proficiency, but perhaps from an unfamiliar book, be selected. This would rule out the possible role which memory may play in answering questions pertaining to the passage (Tractenberg, 2002).

- In order to evaluate the participants reading comprehension, the researcher formulated a number of multiple-choice questions focused on the participants' comprehension of the content of the selected passage. However, these questions were found to be too basic and undemanding to provide a true reflection of the comprehension skills of the participants. The participants could guess the correct answer from the answers provided in the multiple-choice lists. This obvious limitation in the research method led to better than expected scores for reading comprehension skills compared to their results for reading decoding (Pretorius, 2002; Owens, 2001; Liberman; Schankweiler & Liberman; 1989). The results influenced the relationship between the participants' reading comprehension and their phonological awareness skills, as no relationship was found to exist between these skills. This is contrary to findings reported in literature which state that there is a strong correlation between reading comprehension and phonological awareness skills (Roth & Baden, 2001; Larrivee & Catts, 1999; Van Kleeck, Gillam & McFadden, 1998). The use of

open-ended questions in future research projects are recommended as this technique should reduce the possibility of a participant relying on memory (Tractenberg, 2002) or using the answers provided for the multiple-choice questions to guess the correct answer. By using these types of questions, a true reflection of a participant's reading comprehension abilities should be obtained.

- The standardised tests, namely *The Goldman Fristoe Test of Articulation* (Goldman & Fristoe, 1986), *The Clinical Evaluation of Language Functions* (Semel & Wiig, 1980), and the *Phonological Awareness Battery* (Frederickson, Reason & Frith, 1997) that were implemented, cannot be assumed to be culturally appropriate since none of these tests were not standardised for the South African EAL-context but for European and American populations. This may have had a contaminating influence on the accuracy of the results of this study. Given that no tests that were standardised for any South-African populations were available, the use of the selected tests was inevitable. This was taken into account in the study and therefore the researcher followed Goldstein's general guidelines (as discussed in Chapter 3) for conducting least-biased assessment (Goldstein, 2000).

- The specific educational setting was selected because the learners were Black with English as the only LoLT. Even though the research was conducted in a school where English is the language of mutual understanding, this school offered a unique setting, which is not necessarily a representative of the broader public school system in South Africa. The researcher purposefully selected this context because it could provide important information on the culturally and linguistically heterogeneous African speaking learners in a multi-cultural, multi-lingual educational setting. This specific context was also selected as all the learners are mother tongue speakers of an African language. Through selecting this context a host of variables which could influence the results were limited. In the broader public school setting there may be a combination of all the official languages as well as French, Portuguese, and others, but such schools would not have provided an optimal setting for the

purposes of this study. However, similar research needs to be conducted in a context such as the one described above in order to come to an understanding of learners' needs in a cross section of the 'average' public school system in South Africa.

As previously mentioned, it is also important to identify the *strengths* of this study as this may serve as a basis for improved research methods of future research in the field of phonological awareness skills. The strengths that were identified are discussed below.

- The research conducted in this study is both timely and topical. The multi-cultural, multi-lingual education context is a stark reality in South Africa (Broom, 2004; Chick, 2002; Mutasa, 2000). This context on education in the 'new South Africa', coupled with the controversial OBE system do not impact on scholastic education only, but also confronts service delivery by speech-language therapists with unique challenges (Stoop, 2003; Noble, 2002; Haarhof, 2001). Therefore, this research project and its findings can be viewed as a positive contribution to more effective, accountable service delivery by professionals in the field of Speech-Language Therapy (Van Kleeck et al., 1998). The results of this research are directly relevant for the unique South African context, and should inspire more appropriate intervention, because understanding a specific phenomenon leads to the development of new strategies and a more appropriate application of skills to meet the challenges inherent to the phenomenon. Seen in this light, the results of this study may help to remove some of the learning barriers that learners similar to the participants in this study, experience on a daily basis.

- When research is conducted, it is of utmost importance that it should be guided by a solid theoretical background (De Vos, 2005; Leedy & Ormrod, 2004). The overview of the literature on the South African context, language-related aspects in the teaching and learning process, phonological awareness skills, the educational context, and the role of the speech-language therapist were properly referenced throughout and served as a sound basis for meaningful interpretation of the results.

- Phonological awareness is an integral part of academic success (Muter & Diethelm, 2001; Roth & Baden, 2001; Van Kleeck et al., 1998; Majsterek & Ellenwood, 1995). For this reason the current research project included a broad spectrum of communication and academic skills as well as a thorough evaluation of the participants' level of functioning in the researched areas. This enabled the researcher to draw correlations between the participants' phonological awareness skills and their phonological, language, reading, and spelling abilities. It was important to evaluate this broad spectrum of communication and academic skills because, together, these skills constitute an integrated whole. The information gathered by this evaluation enabled the researcher to provide an in-depth description of the participants' phonological awareness skills.

- The pilot study improved the validity and reliability of the results (Leedy & Ormrod, 2004). The raw data score sheet (Appendix K) that was developed on grounds of the results of the pilot study greatly assisted in the organisation of the obtained data. Through a logically structured organisation of the data, the researcher ensured that all the targeted data were obtained for each participant and this, in turn, aided in the statistical analysis – the organised data could be easily transferred to the statistical analysis sheets used by the statistician (Louw, 2005). The concept of a raw data score sheet can be useful in future research, as it was showed to effectively assist in the organisation of data.

- Ethical research implies that the participants are respected at all times (Louw, 2004). Informed consent from the participants and their parents were obtained. As the participants were minors, their consent was obtained by way of a verbal explanation followed up by a letter written on an age-appropriate level (Appendix D). The participants felt, from the beginning, that they were part of the research process and took responsibility for their contributions to the research, because they regarded their consent as a 'contract' with the researcher (Appendix D).

- Analysis of the participants' utterances as elicited by the *Goldman Fristoe Test of Articulation* (Goldman & Fristoe, 1986) by a panel of listeners determined the

vowel and/or consonant variations occurring in the participants' verbal responses. The panel of listeners for the analysis of the phonological abilities of the participants consisted of the researcher, a second speech-language therapist and a speech scientist specialising in phonetics. The use of three listeners reduced bias and increased the reliability and validity of the results (Leedy & Ormrod, 2004).

- As far as could be determined, the execution of this research project is the first attempt to describe the phonological awareness skills of a group of ELoLT Grade 4 learners in the South African context. Furthermore, the researcher is of the opinion that the results of the study are of value, because they provide insight into the phonological awareness skills of learners in a multi-cultural, multi-lingual context, but with English as the only language of instruction.

- The results of this research project can provide the taskforce focusing on education in a multi-cultural, multi-lingual society with specific guidelines regarding the need for additional second-language support, increased emphasis on the importance of phonological awareness skills, and expansion of reading and spelling skills of ELoLT learners.

A reflection on the results of the current study led the researcher to the identification of certain *clinical* and *research implications* for further research. These implications are discussed forthwith.

5.4 CLINICAL IMPLICATIONS OF THE RESULTS

The findings of this study have far reaching implications in terms of the role of the speech-language therapist in collaboration, prevention, assessment, and intervention that focuses on the development of the phonological awareness skills of learners in a multi-cultural, multi-lingual outcomes based education context, especially where the learner's mother tongue is not the assumed language of mutual understanding, namely English, which is the LoLT. The importance of fulfilling these roles becomes evident when the importance of adequate phonological awareness skills in the attainment of each individual's full academic potential is realised. Possible

applications of the results by the well informed (empowered) speech-language therapist are suggested below.

- The speech-language therapist may convey information pertaining to the importance of adequately developed phonological awareness skills of learners with ELoLT, by presenting workshops for teachers. This information will empower teachers to make timeous referrals to speech-language therapists and in so doing establish a model for closer collaboration between speech-language therapists and teachers. The role of the speech-language therapist in the educational context has been clearly delineated (ASHA, 2005). The findings of the current study indicated that the participants experienced delays in their phonological, language, reading, and spelling abilities as well as in their phonological awareness skills. These shortfalls clearly requires the speech-language therapist become a broker of information (Rossetti, 2001) in a collaborative setup (Du Plessis, 2005), especially regarding phonological awareness skills and its importance for the development of reading and spelling (Bernthal & Bankson, 2004; Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998).

- Speech-language therapists need an in depth understanding of the important relationship between phonological awareness skills on the one hand, and reading and spelling abilities. Such understanding will ensure the inclusion of an assessment of phonological awareness skills in the basic evaluation of each school-aged client, which will lead to a better understanding of the learners' strengths and limitations in the academic setting. As phonological awareness skills and phonological, language, reading and spelling abilities are interconnected, it is important that the influence of these skills on academic performance is taken into account in the speech-language therapist's planning of therapy (Carol, Snowling, Hulme & Stevenson; 2003, Cooper, Roth, Speece & Schatschneider; 2002; Roth & Baden, 2001; Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, & McFadden, 1998; Catts, 1993).

- Many Black learners in the South African context pose a challenge to the speech-language therapist when it comes to expanding these learners' various language related abilities in order to enable them to cope with English as LoLT. Therefore, the speech-language therapist needs to provide support in EAL to these learners in order to reduce the influence of below-average language development on general scholastic/academic achievement. Because phonological awareness is a meta-linguistic skill, the learner's language development must be brought to a level where the learner is able to engage on a higher cognitive level of language use (Goldsworthy, 2001).

- The speech-language therapist not only has an obligation towards his/her clients, but also towards the broader community in terms of emphasising the importance of early exposure to English, even before the learner enters the school system where English is the inevitable LoLT. Early intervention aimed at the improvement of phonological awareness skills is of crucial importance, because these skills develop from as young an age as three years, when the child is, ideally, exposed to rhyme, alliteration and stories (Roth & Baden, 2001). Learners' phonological awareness skills enable them to embark on the process of mastering reading and spelling when they enter into the formal schooling system (Larrivee & Catts, 1999; Hodson, 1998; Van Kleeck, Gillam, McFadden, 1998).

- The results of the study emphasise the need for a change in the current school system on grounds of the limited accommodation afforded to the different languages and cultures in the current South African school context. This education policy has a negative impact on learners' academic performance. The education system as it currently functions in this country is not optimally equipped to accommodate all the country's sub-cultures (Olivier, 1997). This shortcoming is the direct cause of learners from different cultural and language backgrounds being 'accommodated' in one class where English is the only language of learning and teaching in English mainstream schools. This leads to a situation where individual cultures and customs are neglected and in most

instances disregarded (Cummins, Bismilla, Chow, Cohen, Giampapa, Leoni, Sandhu & Sastri, 2005). The results of this study clearly show that urgent research needs to be conducted in the educational setting to assist learners from diverse backgrounds to overcome the learning barriers posed by the current situation in school education.

- The vowel repertoire of African languages differs greatly from that of English (Wissing, 2002; Seeff & Jordaan, 2000). Therefore, it is important to use a language-specific vowel chart for each of the African languages as this will provide a true representation of the vowels of any specific African language (Le Roux, 2005). This will enable speech-language therapists to analyse the speech production of their clients in terms of the characteristics of the vowels in the specific language of each client.

The results of this study also generated possibilities for further research. The implications for further research are presented in the next section.

5.5 IMPLICATIONS FOR FURTHER RESEARCH

Expansion of the body of existing knowledge in the field of phonological awareness skills of the learner in the South African context is, especially against the background of current education policies in this country, of crucial importance. The following recommendations for further research deserve consideration.

- The current study clearly indicated the barriers to service delivery and research posed by the lack of standardised tests for the South African context (Weinmann, 2004). In spite of previous research efforts by Weinmann (2004) and Visser (2005) to contribute to the development of tests for the South African population, a dearth of context-specific assessment tools still prevails. The results obtained in this study clearly indicate the urgent need for the development of tests to evaluate the South African learner's phonological awareness skills and his/her proficiencies in related areas of language. The

design of such tests should be aimed at cultural relevance and context specificity (Pakendorf, 1996).

- Researchers agree that there are a variety of pronunciations within BSAE, and that BSAE is characterised by striking differences in levels proficiency, ranging from complete fluency, to levels of hardly any proficiency at all. A 'standard' BSAE does not exist (Makalela, 2004) and this has serious implications for the evaluation of English proficiency in speakers of BSAE, posing a formidable challenge to speech-language therapists and other members in a collaborative team of professionals. For this reason, research should focus on the implementation of closer collaboration between speech-language therapists and linguists in the interpretation of data obtained in the multi-cultural, multi-lingual context where BSAE is increasingly regarded as the language of mutual understanding (Naudé, 2005; Makalela, 2004; Kavanagh, 2002; Wissing, 2002; De Klerk, 1999).

- The participants in this study were all learners with an African language as first language, but education was provided through the medium of English only. However, currently no information exists on the development of phonological awareness skills in the various African languages spoken in South Africa. The question arises whether, firstly, the development of phonological awareness skills in African languages would prove to be different from that in English and, secondly, what the impact of phonological awareness skills in the children's mother tongue would be on their phonological awareness skills in ELoLT. In order to answer these questions, a new direction for future research is strongly indicated. The results of research projects that focus on each language individually will lead to a better understanding of the different languages' unique characteristics and will enable clinicians to provide truly accountable intervention to learners with any of the nine African languages in question as first language.

- Although OBE is implemented throughout South Africa, there are different educational contexts in which the African learner receives schooling (Naicker, 1999; Olivier, 1997). Research focusing on the Black learner within the

various multi-cultural, multi-lingual educational contexts is required, as research findings will contribute to an awareness in speech-language therapists of the different educational contexts (for example private schools and public schools in rural and urban contexts). The influences of the context on intervention should be kept in mind when a learner's language and phonological awareness skills are addressed, because each context has it own unique characteristics (Naudé, 2005).

- The current method of reading and spelling instruction in schools is a matter of great concern, one of the principles of OBE being that reading and spelling are not instructed on a formal level, but that reading and spelling abilities should develop incidentally (Broom, 2004; Muter & Diethelm, 2001). Based on the current findings, the researcher is of the opinion that the current OBE system is not conducive to the development of phonological awareness skills to a level of acceptable adequacy. Research projects which address the current method of reading and spelling instruction in schools should be undertaken in order to create a better understanding of the dynamics of spelling and reading instruction. Collaborative research should be conducted where the professions of Communication Pathology and Primary Education combine research efforts that may lead to the development of a curriculum that will take the development of phonological awareness skills into account (Du Plessis, 2005; Naudé, 2005).

- As English was not the first language of any of the participants in this study, but their only LoLT, they had no choice but to spell in a language which, to them, was actually 'foreign'. The results of this study clearly indicated that the first language influenced the participants' spelling of English words (Makalela, 2004). Therefore, the influence of a learner's mother tongue on spelling skills should be investigated in the context of OBE in order to inform the relevant stakeholders.

- Currently, intervention guidelines regarding the development of phonological awareness skills in multi-lingual learners are limited, partly because of the controversial issues around the transference of phonological awareness skills

in the mother tongue to a learner's second or third language (Holm & Dodd, 1996). A comparative study could be undertaken where the phonological awareness skills of learners in their first language as well as in English as LoLT are determined and then compared. This will aid in the development of intervention strategies for multi-lingual learners.

5.6 CONCLUSION

"Evidence-Based practice implies the use of the current best evidence in making decisions about the care of individual patients by integrating individual clinical expertise with the best available external clinical evidence from systematic research"
(Dollaghan, 2004:4)

It is important for all speech-language therapists who serve Black learners in the multi-cultural, multi-lingual South African context to integrate their clinical expertise in the treatment of phonological awareness problems with the available evidence provided by research in this field. It is, primarily, the speech-language therapist who holds the key to developing the phonological awareness skills of learners similar to the participants in this study to an age-appropriate level. The result of such development will be a corps of learners who are able to adequately cope within the current context of education and who will, furthermore, be empowered to reach their full academic potential. Successful education breeds well adjusted individuals who will be able to contribute significantly to the overall welfare of our 'rainbow-nation' (Christie, 1991).

REFERENCES

Abercrombie, D. (1991). *Fifty years in Phonetics: selected papers.* Edinburgh: Edinburgh Press Maryknoll, New York: Orbis Books.

Adams, M. (1990). *Beginning to read: thinking and learning about print.* Cambridge. MA: MIT Press.

Alexander, N. (1999). English Unassailable but Unattainable: The Dilemma of Language Policy in South African Education. *Paper presented at the Biennial Conference of the International Federation for the Teaching of English*, July, Warwick, England.

American Speech-Language-Hearing Association (ASHA) (2005). (Central) Auditory Processing Disorders – The Role of the Audiologist [Position Statement]. Accessible at http://www.asha.org/members/deskref-journals/deskref/default.

American Speech-Language-Hearing Association (ASHA). (2001). *Roles and responsibilities of speech-language pathologists with respect to reading and writing in children and adolescents: Position statement, guidelines and technical report.* Rockville, Maryland.

American Speech-Language-Hearing Association (ASHA) Task Force (1996). Central auditory processing: Current status of research and implications for clinical practice. *American Journal of Audiology*, 5(2), 41 – 54.

American Speech-Language-Hearing Association (ASHA) Position Paper. (1985). Clinical management of communicatively handicapped minority language populations. *ASHA*, June, 27(6), 29 – 32.

American Speech-Language-Hearing Association (ASHA). (1978). Guidelines for Manual Pure-tone Audiometry. *ASHA,* 20, 297-301.

Anderson, D. R., Sweeney, D. J., & Williams, T.A. (2003). *Modern business statistics with Microsoft Excel.* USA: South Western.

Ayoun, D. (2004). The effectiveness of written recasts in the second language acquisition of aspectual distinctions in French: A follow-up study. *Modern Language Journal*, 88, 31 – 55.

Baker, C. (1996). *Foundations of Bilingual Education and Bilingualism.* 2nd Edition. Multilingual Matters: Clevedon.

Ball, E. W. (1993). Assessing Phoneme Awareness. *Language, Speech, and Hearing Services in Schools,* 24, 130 – 139.

Bellis, T. M. (2003). *Assessment and Management of Central Auditory Processing Disorders in the Educational Setting: From Science to Practice*. (2nd Edition). Thomson Delmar Learning.

Berg, B. L. (1998). *Qualitative research method's for the Social sciences.* Allyn & Bacon, London.

Bernthal, J. E., & **Bankson, N. W.** (2004). *Articulation and Phonological Disorders* (5th Ed.), Allyn & Bacon.

Bialystok, E. & **Herman, J**. (1999). Does Bilingualism matter for early literacy? *Bilingualism: Language and Cognition,* 2(1), 35 – 44.

Bird, J. & Bishop, D. V. M. (1995). Phonological awareness and literacy development in children with expressive phonological impairments. *Journal of Speech & Hearing Research,* April, 38(2), 446 – 470.

Bishop, D. V. M., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. *Journal of Child Psychology and Psychiatry,* 31, 1027 – 1050.

Bland-Steward, L. M. (2005). Difference or Deficit in speakers of African American English? *The ASHA leader*, May, 10(6), 6-31.

Boone, D. R., & McFarland, S. C. (1994). *The Voice and Voice Therapy* (5th Ed.). Prentice-Hall, New Jersey.

Broom, Y. (2004). Reading English in Multilingual South African Primary Schools. *Bilingual Education in Bilingualism*, 7(6), 506 – 528.

Carroll J. M., & **Snowling, M. J.** (2004). Language and phonological skills in children at high risk of reading difficulties. *Journal of Child Psychology and Psychiatry*, 45(3), 631 – 640.

Carroll, J. M., Snowling, M. J., Hulme, C., & **Stevenson, J.** (2003). The development of Phonological awareness in preschool children. *Developmental History,* September, 39(5), 913 – 925.

Catts, H. W. (1993). The relationship between Speech-Language impairments and reading disabilities. *Journal of Speech and Hearing Research,* 36, 948 – 958.

Catts, H. W. (2001). Estimating the risk of future reading difficulties in Kindergarden children: a research based study. *Language, Speech, & Hearing Services in Schools,* January, 32(1), 38 – 15.

Catts, H. W., Fey, M. E., Zhang, X., & **Tomblin, J. B**. (1999). Language basis of reading and reading disabilities: evidence from a longitudinal investigation. *Scientific Studies of Reading,* 3, 331 – 361.

Census 2001. http://www.southafrica.info/ess_info/sa_glance/ demographics/ language.htm. Last accessed on 1 September 2006.

Chick, J. K. (2002). Constructing a multi-cultural national identity: South African Classrooms as sites of struggle between competing discourses. *Journal of Multi-lingual and Multi-cultural development,* 23(6), 462 – 480.

Christie, P. (1991). *The Right to Learn: The Struggle for Education in South Africa.* National Book Printers, Cape Town.

Cisero, C. A., & **Royer, J. M.** (1995). The development and cross-language transfer of Phonological Awareness. *Contemporary Educational Psychology,* 20(3), 275 – 303.

Cjasa, R., & **Blair, R.** (1996). *Designing Surveys: a guide to decisions and procedures.* Thousand Oaks: Pine Fage.

Clarke-Klein, S., & Hodson, B. W. (1995). A phonologically based analyses of misspellings by third-Graders with disordered-phonology histories. *Journal of Speech and Hearing Research,* August, 38(4), 839 – 849.

Cooper, D. H., Roth, F. P., Speece, D. L., & **Schatscheider, C.** (2002). The contribution of Oral language skills to the development of Phonological Awareness. *Applied Psycholinguistics,* September, 23(3), 399 – 416.

Courcy, A., Béland, R., & **Pitchford, N. J.** (2000). Phonological Awareness in French-speaking children at risk for reading disabilities. *Brain and Cognition,* June – August, 43(1 – 3), 124 – 130.

Cowan, W. E., & Moran, M. J. (1996). Phonological Awareness skills of children with Articulation disorders in Kindergarden to Third Grade. *Journal of Children's' Communication Development,* 18(2), 31 – 38.

Crisp, W. B. D. (1881). *Notes towards a Secoana Grammar.* London: Society for Promoting Christian Knowledge.

Cummins, J. (1980). Psychological assessment of immigrant children: Logic or intuition. *Journal of Multilingual Multicultural Development*, 1(2), 97 – 111.

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

Cummins, J. (2000). *Language, Power & Pedagogy: Bilingual Children in the Crossfire*. Clevedon: Multilingual Matters.

Cummins, J., Bismilla, V., Chow, P., Cohen, S., Giampapa, F., Leoni, L., Sandhu, P., & **Sastri, S**. (2005). Affirming Identity in Multilingual Classrooms. *Educational Leadership*, September, 38 – 44.

Dawber, A., & **Jordaan, H.** (2002). ***Second Language Learners in the Classroom.*** The Natal Witness Printing and Publishing Company: Pretoria.

DeKeyser, R. M. (2000). The robustness of critical period effects in second language acquisition. *Studies in Second Language Acquisition*, 22 499 – 533.

DeKeyser, R. M. (2005). What Makes Learning Second Language Grammar Difficult? A Review of Issues. *Language Learning*, 55, June, Supplement no.1, 1 – 25.

De Klerk, V. (1999). Black South African English: Where to from here? *World Englishes*, 18(3), 311 – 324.

Devine, J. (1988). A Case study of two readers: models of learning and reading performance. In P.L. Carrol, J. Devine, & Eskey, D. E. (Eds.). *Interactive approaches to second language reading*. Cambridge: Cambridge University Press.

De Vos, S. (1998). *Research at Grass Roots. A Primer for the Caring Profession.* J. L. van Schaik Academic, Pretoria.

De Vos, A. S; Strydom, H.; Fouché, C. B.; Delport, C. S. L. (2005). *Research at Grass Roots. A Primer for the Caring Profession.* J. L. van Schaik Academic, Pretoria.

Dollaghan, C. (2004). Evidence-based practice myths and realities. *The ASHA Leader*. 13 April 2004, 4 – 12.

Du Plessis, S. (2005). *Multilingual preschool learners: a collaborative approach to communication intervention*. Unpublished D. Phil. Thesis, Department of Communication Pathology, University of Pretoria, Pretoria.

Durgunoglu, A. Y. (2002). Cross-linguistic Transfer in Literacy Development and Implications for Language Learners. *Annals of Dyslexia*, 52, 189 – 204.

Edmonston, N. K., & **Thane, N. L**. (1992). Children's use of comprehension strategies in response to relational words: Implications for assessment. *American Journal of Speech-Language Pathology*, 1(2), 30 – 35.

Flege, J. E. (1987). The production of 'new' and 'similar' phones in a foreign language: Evidence for the effects of equivalence classification. *Journal of Phonetics*, 15, 47 –65.

Frederickson, N., Reason, R., & **Frith, U**. (1997). *The Phonological Assessment Battery (PHAB).* Nfer-Nelson. United Kingdom.

Frédoux, J. (1864). *A Sketch of the Sechuana Grammar.* Cape Town: J. C. Juta, J. L. Phillip.

Geva, E. (2000). Issues in the assessment of reading disabilities in L2 children: Beliefs and research evidence. *Dyslexia*, 6, 13 – 28.

Goduka, M. I., & **Swadener, B. B**. (1999). *Affirming unity in diversity in Education: Healing with Ubuntu.* Cape Town: Juta.

Goldman, R., & **Fristoe, M**. (1986). *Goldman-Fristoe Test of Articulation.* AGS. Circle Pines, MN.

Goldstein, B. (2000). *Resource Guide on Cultural and Linguistic Diversity.* Singular Publishing Group: Thompson Learning.

Goldstein, B., & **Iglesias, A**. (2004). Language and Dialectical Variations, in *Articulation and Phonological Disorders, (*5th Edition). Eds. J. E. Bernthal, & N. W. Bankson. Pearson Education, Boston.

Goldsworthy, C. L. (2001). *Sourcebook of Phonological Awareness Activities.* Volume II. Children's Core Literature, pp 1- 5. San Diego: Singular.

Groenewald, E., & Le Roux, M. (2005). Applied Phonetics in *Sounds and Sound Systems.* Tutorial Letter 501/2005. University of South Africa.

Grosjean, F. (1998). Studying bilinguals: Methodological and conceptual issues. *Bilingualism: Language and Cognition,* 1, 131 – 149.

Gultig, J., Lubisi, C., Parker, B., & **Wedekind, V.** (1998). *Understanding Outcome-Based Education: Teaching and Assessment in South Africa: Reader.* Johannesburg: South African Instance for Distance Education.

Haarhoff, L. (2001). *Phonological Awareness of Afrikaans speaking learners in an English medium school.* Unpublished Undergraduate Thesis, Department of Communication Pathology, University of Pretoria.

Hacquebord, H. (1994). AL reading in the content areas: text comprehension n secondary education in the Netherlands. *Journal of Research in Reading*, 17, 83 – 98

Health Professions Council of South Africa (HPCSA). (2005). Final Document: Continuing Professional Development. *Guidelines for the Health Professions*.

Hennop, L. (2004). ***Personal Consultation***. Principal: Primary phase, XXXXX College of Education.

Hodson, B. W. (1998). Research and Practice: Applied Phonology. *Topics in Language Disorders,* February, 58 – 68.

Hoff, E. (2005). *Language Development*, (3rd Ed.). Wadsworth Thompson Learning, Belmont, USA.

Hogan, T. P., Catts, H. W., & **Little, T. D.** (2005). The relationship between phonological awareness and reading: Implications for the assessment of phonological awareness. *Language, Speech and Hearing Services in Schools*, October, 36, 285-293.

Holm, A., & **Dodd, B.** (1996). The effect of first written language on the acquisition of English Literacy. *Cognition,* May, 59(2), 119 – 147.

Hough, K. (2002). The case against Bi- and Multilingual Education in South Africa. *Perspectives in Education,* 20(1), 171 – 196.

Invernizzi, M., Meier, J. D., Swank, L. K., and Juel, C. L. (1998). *Phonological Awareness Literacy Screening*. University of Virginia, Charlottesville.

Invernizzi, M., & **Robey, R. R**. (2001). Phonological Awareness Literacy Screening: Technical Manual and report. University of Virginia, Charlottesville.

Ishida, M. (2004). Effects of recasts on the aspectual form –te i (ru) by learners of Japanese as a foreign language. *Language Learning*, 54, 311 – 394.

Jarvis, S. (2002). Topic continuity in L2 Article use. *Studies in Second Language Acquisition*, 24, 387 – 418.

Jones, C. J. J., & **Mollema, N.** (2005). Articulatory Aspects of African languages taught at postgraduate level, in *Sounds and Sound Systems.* Tutorial Letter 501/2005. University of South Africa.

Justice, L. M., Invernizzi, M. A. & **Meier, J. D**. (2002). Designing and Implementing an Early Literacy Screening Protocol: Suggestions for the Speech-Language Pathologist. *Language, Speech and Hearing Services in Schools*, 33 (April), 84 – 101. American Speech-Language-Hearing Association.

Justice, L. M. & Schuele, C. M. (2004). Phonological Awareness: Description, Assessment, and Intervention, in *Articulation and Phonological Disorders* (5th Ed.). Edited by Bernthal, J. E., & Bankson, N. W. Allyn & Bacon.

Kachru, B. B. (1986). *The Alchemy of English*. Oxford: Pergamon Press.

Katz, J. (1994). *Handbook of Clinical Audiology (*4th Ed.). Williams and Wilkens. Baltimore, Maryland.

Katz, J. & Wilde, L. (1994). Auditory Processing Disorders. In J. Katz, (Ed.), *Handbook of Clinical Audiology (*4th Ed.), 490 – 502. Williams and Wilkens. Baltimore, Maryland.

Kavanagh, C, (Ed.). (2002). *South African Concise Oxford Dictionary.* Oxford University Press.

Keller, G. K., & **Warrack, B.** (2000). *Statistics for Management and Economics.* USA: Duxbury.

Kent, R. (2004). Normal aspects of articulation, in *Articulation and Phonological Disorders*, (5th edition). Eds. J.E, Bernthal & N.W. Bankson. Pearson Learning, Boston.

Kent, R. D. (1983). Role of research: How can we improve the role of research and educate Speech-Language pathologists and Audiologists to be competent users of research? *ASHA* reports *no. 13.*

Kohnert, K. & Goldstein, B. (2005). Speech, Language, and Hearing in Developing Bilingual Children: From Practice to Research. Language, Speech, and Hearing Services in Schools, July (36), 169 - 171.

Lanham, L. W. (1967). *The way we speak*. J. L. van Schaik, Ltd. Pretoria.

Lanham, L. M. (1967). *Teaching English in Bantu Primary Schools: Final report on Research in Johannesburg Schools*. Johannesburg: English Academy of South Africa.

Lanham, L. W. (1984). Stress and intonation and the intelligibility of South African Black English. *African Studies*, 43, 217 – 230.

Larrivee, L. S., & **Catts, H.W.** (1999). Early reading achievement in children with expressive phonological disorders. *American Journal of Speech Language Pathology,* 8, 118 – 128.

Le Roux, M. (2004). *An Acoustic Phonetic Study of the Vowels of Setswana.* Unpublished Post-graduate Thesis, Department of African Languages, University of South Africa.

Le Roux, M. (2005). *Personal Consultation.* Senior Lecturer at the Department of African Languages, University of South Africa.

Leedy, P. D., & **Ormrod, J. E**. (2004). *Practical Research: Planning and Design* (8th Ed.). Pearson Education International.

Lesiak, J., & Bradley-Johnson, S. (1983). *Reading Assessment for Placement and Programming.* Springfield: Charles C. Thomas.

Liberman, I. Y., Schankweiler, D., & **Liberman, A. M**. (1989). The Alphabetic principle and learning to Read. In *Phonology and Reading Disability: Solving the Reading Puzzle,* 1 – 33. Eds. D. Shankweiler, & I. Y. Liberman. Ann Harbor: University of Michigan Press.

Louw, B. (2004). *Research Ethics in Communication Pathology: Class Notes.* Department of Communication Pathology. University of Pretoria.

Louw, B. (2004). Culture, in *Educational Psychology*. Edited by I. Eloff, & L. Ebersöhm, L. UCT Press.

Louw, D. A., van Ede, D. M., & Louw, A. E. (1998). *Menslike Ontwikkeling* (3de Uitgawe). Kaapstad: Kagiso Tersiêr.

Louw, L. (2005). *Short Course in Statistics.* Senior Lecturer, Department of Statistics, University of Pretoria.

Louw, L. & Sommerville, J. (2004). *Personal Communication.* Department of Statistics, University of Pretoria.

Magnusson, E., & **Naucler, K.** (1990). Reading and spelling in Language Disordered children- Linguistic and metalinguistic prerequisites: Report on a Longitudinal Study. *Clinical Linguistics and Phonetics,* 4, 49 – 61.

Majsterek, D. J., & **Ellenwood, A. E**. (1995). Phonological Awareness and beginning reading: evaluation of a school-based screening procedure. *Journal of Learning Disabilities,* 28(7), 449 – 457.

Makalela, L. (2004). Making sense of BSAE for linguistic democracy in South Africa. *World Englishes*, 23(3), 355 – 366.

Martin, D. (1997). Towards a new multi-lingual language policy in education in South Africa: Different approaches to meet different needs. *Educational Review*, June, 49(2), 129-141.

Martin, F. N. (1997). *Introduction to Audiology* (6th Ed.) The University of Texas at Austin. Allyn & Bacon.

Martin, F. N. & Clark, J. G. (2000). *Introduction to Audiology* (Seventh Edition). Pearson Education Company, Needham Heights.

Maxwell, D. L., & **Satake, E**. (1997). *Research and statistical methods in Communication Disorders.* Maryland: Williams & Wilkins.

McCord, S. (2000). *Phonological Awareness in a Group of Grade 1 mainstream learners from a multilingual Background.* Unpublished Undergraduate Thesis, Department of Communication Pathology, University of Pretoria.

McFadden, T. U. (1998). Sounds and stories: teaching Phonemic Awareness in interactions around text. *American Journal of Speech Language Pathology,* 7, 5 – 13.

McFarland, D. J. & Cacace, A. T. (1997). Modality specifity of Auditory and Visual pattern recognition: Implications for the assessment of Central Auditory Processing Disorders. *Audiology*, 36(5), 249 – 260.

Medwetsky, L, (2002b). Central Auditory Processing testing: A battery approach. In J. Katz, (Ed.), *Handbook of Clinical Audiology*, (5th Edition), 510 – 524. Lippincott Williams and Wilkins: Baltimore.

Mouton, J. (2004). *How to succeed in your Master's & Doctoral studies: a South African guide and source book.* Van Schaik Publishers.

Mutasa, D. E. (2000). Language policy and language use in South Africa: an uneasy marriage. *South African Journal of Languages*, 20(3), 217 – 225.

Muter, V., & **Diethelm, K**. (2001). The contribution of Phonological Skills and letter knowledge to early reading development in a multilingual population. *Language Learning,* 51(2), June, 187 – 219.

Naicker, S. M. (1999). Inclusive Education in South Africa, in *Inclusive Education in Action in South Africa.* Edited by P. Engelbrecht, L. Green, S. M. Naicker, & L. Engelbrecht. Van Schaik Publishers, Pretoria, South Africa.

Nancollis, A., Lawrie, B. A., & **Dodd, B**. (2005). Phonological awareness intervention and the acquisition of literacy skills in children from deprived backgrounds. *Language, Speech and Hearing services in Schools*, 36 (October), 325 – 335.

Naudé, E. (2005). *Personal Consultation.* Senior Lecturer at the Department of Communication Pathology, University of Pretoria.

Naudé, E. (2005). *Profiling language in young urban English Additional Language learners.* Unpublished D. Phil. Thesis, Department of Communication Pathology, University of Pretoria, Pretoria.

Nippold, M. A., Scott, C. M., Norris, J. A., & **Johnson, C. J.** (1993). *School-age children and adolescents: Establishing language norms, Part 2*. Paper presented at the Annual Convention of the American Speech-Language-Hearing Association, Anaheim, CA.

Noble, L. (2002). *The English Phonological Awareness skills of Grade One Zulu First language learners in as English-Medium school.* Unpublished Undergraduate Thesis, Department of Communication Pathology, University of Durban-Westville.

Northern J. L., & Downs, M. P. (1984). *Hearing in Children* (3rd Ed.). Williams & Wilkens: Baltimore, London.

Olivier, C. (1997). *Outcome-Based Education and Training Programmes: Processes, Knowledge, Skills*. Ifafi: OBET Pro.

Owens, R. E. (1999). *Language Disorders: A Functional Approach to Assessment and Intervention* (3rd Ed.). Allyn & Bacon.

Owens, R. E. (2001). *Language Development- An Introduction* (5th Ed.) Allyn & Bacon, Boston.

Pakendorf, C. (1996). *The translation of the Peabody Picture Vocabulary Test: Revised into Northern Sotho: a Preliminary*. Unpublished Post-graduate Thesis, Department of Communication Pathology, University of Pretoria.

Peshkin, A. (1988). Understanding complexity: a gift of Qualitative research. *Anthropology and Education Quarterly,* 19, 416 – 424.

Pijper, N. (2004). *The Phonological Awareness, written spelling and oral reading of learners in an Inclusive English-medium education setting.* Unpublished Post-graduate Thesis, Department of Communication Pathology, University of Pretoria.

Porpodas, C. D. (1999). Patterns of Phonological and Memory Processing in beginning readers and spellers of Greek. *Journal of Learning Disabilities.* Sep/ Oct. 32(5), 406 – 417.

Pretorius, E. J. (2002). Reading ability and academic performance in South Africa: Are we fiddling while Rome is burning? *Language Matters: Studies in the Languages of Southern Africa: Literacy in the African Environment*, Special Issue, 33, 169 – 196.

Rossetti, L. M. (2001). *Communication Intervention: Birth to Three*, Singular Thompson Learning, San Diego.

Roth, F. R., & **Baden, B**. (2001). Investigating in emergent literacy intervention: a key role for Speech Language Pathologists. *Seminars in Speech and Language*, 22(3), 163 – 173.

Rvachew, S., Ohberg, A., Grawburg, M., & **Heyding, J.** (2003). Phonological Awareness and Phonemic Perception in 4-year-old children with delayed expressive Phonology Skills. *American Journal of Speech Language Pathology,* November, 12(4), 463 – 471.

Scarborough, H. S. (1998). Early identification of children at risk for reading disabilities: Phonological Awareness and some other promising predictors, in *Specific Reading Disability: A view of the Spectrum,* 75 – 119. B. K. Shapiro, P.J. Accardo & A. J. Capute (Eds.), Timonium, MD: York Press.

Seeff, B., & **Jordaan, H**. (2000). The vowel processing skills of ESL learners related to their English spelling difficulties: a psycholinguistic approach. *The South African Journal of Communication Disorders,* 47, 13 – 23.

Semel, E. M., & Wiig, E. H. (1980). *Clinical Evaluation of Language Functions (CELF).* Charles E. Merrill Publishing Co., Bell & Howell.

Silman, S., & **Silverman, C. A.** (1991). *Auditory Diagnosis: Principles and Applications.* San Diego: Academic Press.

Solarsh, B. (2002). Reasoning for reading: an error analysis of oral reasoning skills of rural Zulu-speaking children. *Language Matters: Studies in the Languages of Southern Africa: Literacy in the African Environment*, 33, 70 – 110.

Stackhouse, J. (1997). Phonological awareness: Connecting speech and literacy problems. In B. W. Hodson and M. L. Edwards (Eds). *Perspectives in applied phonology*, 157 – 196, Gaithersburg, MD: Aspen.

Stackhouse, J., Wells, B., Pascoe, M., & **Rees, R.** (2002). From phonological therapy to Phonological Awareness. *Seminars in Speech & Language,* 23(1), 27 – 42.

Stoop, E. (2003). *Die ontwikkeling van vroeë Fonologiese Bewustheid by 'n groep voorskoolse leerders.* Unpublished Undergraduate Thesis, Department of Communication Pathology, University of Pretoria.

Struwig, F. W., & **Stead, G. B.** (2002). *Planning, designing and reporting research.* Pearson Education South Africa.

Swank, L. (1990). Phonological coding abilities: identification of impairments related to phonologically based reading problems. *Topics in Language Disorders,* 14, 56 – 71.

Tesner, H. (2004). 'n Fonetiese oorsig van die klanksegmente van Suid-Afrikaanse Engels. *Klinika: Toepassings in kliniese praktyk van Kommunikasiepatologie.* Departement Kommunikasiepatologie, Universiteit van Pretoria.

Tesner, H. (2005). *Personal Consultation.* Senior Lecturer at the Department of Communication Pathology, University of Pretoria.

Torgensen, J. K., & **Wagner R. K.** (1994). Longitudinal studies of Phonological Processing and reading. *Journal of Learning Disabilities,* 27(5), 276 – 287.

Tractenberg, R. E. (2002). Exploring Hypotheses about Phonological Awareness, Memory and Reading Achievement. *Journal of Learning Disabilities*, 35(5), 407 – 424.

Van der Walt, J. L., & **Van Rooy, B**. (2002). Towards a norm in South African Englishes. *World Englishes*, 21(1), 113 – 128.

Van Kleeck, A., Gillam, R. B., & McFadden, T. U. (1998). A study of classroom-based Phonological Awareness training for preschoolers with Speech and/or Language disorders. *American Journal of Speech Language Pathology,* 7, 65 – 76.

Van Riper, C., & **Emerick, L**. (1990). *Speech Correction Introduction to Speech Pathology and Audiology*. Prentice Hall, Inc. New Jersey.

Van Rooy, B. (2002). Stress placement in Tswana English: the makings of a coherent system. *World Englishes*, 21(1), 145 – 160.

Visser, C. M. (2005). *Die toepaslikheid van 'n Afrikaanse vertaling van die SCAN-C: Test for Auditory Processing Disorders in Children – Revised vir voorskoolse leerders.* Unpublished Post-graduate Thesis, Department of Communication Pathology, University of Pretoria.

Weinman, A. C. K. (2004). *'n Voorlopige weergawe van die Phonological Awareness Literacy Screening-Kindergarden (PALS-K).* Unpublished Post-graduate Thesis, Department of Communication Pathology, University of Pretoria.

Wiig, E. H., Becker-Redding, U., & **Semel, E. S.** (1983). A Cross-Cultural, Cross-Linguistic Comparison of Language Abilities of 7- to 8- and 12- to 13-Year Old Children with Learning Disabilities. *Journal of Learning Disabilities*, December, 16(10).

Wissing, D. (2002). Black South African English: A new English? Observations from a phonetic viewpoint. *World Englishes*, 21(1), 129 –144.

Wright, L. (1996). The standardization question and Black South African English. In *Focus on South Africa*. Edited by V. de Klerk. Amsterdam: John Benjamins.

APPENDIX A

PERMISSION FROM THE RESEARCH PROPOSAL AND ETHICS COMMITTEE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

University of Pretoria
Research Proposal and Ethics Committee
Faculty of Humanities

9 November 2004

Dear Ms Avenant

Project:	***Phonological awareness abilities of a group of multi-lingual grade 4-learners, with English as Language of Learning and Teaching (ELoLT)***
Researcher:	**CE Tait**
Supervisor:	**C Avenant**
Department:	**Communication Pathology**
Reference Number:	**99010918**

Thank you for the application you submitted to the Research Proposal and Ethics Committee of the Faculty of Humanities.

The application was approved *conditionally* on 28 October 2004 due to the following:

- the parent questionnaire needs to be submitted

Please submit the questionnaire at your earliest possible convenience to me directly to facilitate the administration process.

We wish you success with the project.

Sincerely

Brenda Louw

Prof Brenda Louw
Chair: Research Proposal and Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

University of Pretoria

Research Proposal and Ethics Committee
Faculty of Humanities

23 November 2004

Dear Ms Avenant

Project:	**Phonological awareness abilities of a group of multi-lingual grade 4-learners, with English as Language of Learning and Teaching (ELoLT)**
Researcher:	**CE Tait**
Supervisor:	**C Avenant**
Department:	**Communication Pathology**
Reference number:	**99010918**

Thank you for your prompt response to the correspondence of the Research Proposal and Ethics Committee, Faculty of Humanities, dated 9 November 2004.

The parental questionnaire was judged to be acceptable.

I have pleasure in informing you that the Research Proposal and Ethics Committee formally approved the above study on 22 November 2004.

The committee requests you to convey this approval to Ms Tait.

We wish you success with the project.

Sincerely

Prof Brenda Louw
Chair: Research Proposal and Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA

APPENDIX B

LETTER OF INFORMED CONSENT TO THE SELECTED EDUCATIONAL COLLEGE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

University of Pretoria

Pretoria 0002 Republic of South Africa Tel 012-420-2357
/ 012-420-2816 Fax 012-420-3517 http://www.up.ac.za

Department of Communication Pathology
Speech, Voice and Hearing Clinic

13 August 2004

The Management Body
XXXX Educational College
Iris Street
Karen Park
0082

Dear Mrs. X XXXXX

Re: Permission to conduct Research for the Communication Pathology Master's Degree

I am currently registered for M.Communication Pathology degree at the University of Pretoria. In order to complete the degree, I am required to conduct a research project.

The subject of my research is "PHONOLOGICAL AWARENESS ABILITIES OF A GROUP OF MULTI-LINGUAL, GRADE 4-LEARNERS, WITH ENGLISH AS LANGUAGE OF LEARNING AND TEACHING (ELoLT)".

The results of the study will provide insight into the phonological awareness of multi-lingual, multi-cultural learners within the outcome-based educational system. The information obtained will also contribute to the knowledge of how to further the development of literacy skills of multi-lingual learners with English as Language of Learning and Teaching (ELoLT).

The study will involve fifteen Grade 4-learners. These learners will be evaluated by using a test battery including: a hearing screening, language and phonological

awareness tests, and reading and spelling evaluations. Results will then be analysed and conclusions drawn regarding the relationships between these various aspects, to determine the learners' phonological awareness in English.

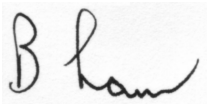
It is estimated that testing will take approximately two hours per learner. Testing will take place over a two-week period within school hours (the only time available as the learners' main –and in most instances only- mode of transport is by bus). I would like to commence testing early in the fourth term.

Parents of the learners selected will be required to provide permission and to complete a short history information sheet.

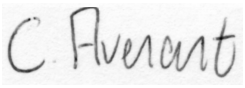
Your permission to conduct this study at XXXXX College in school hours is hereby formally requested. Your co-operation in this regard is appreciated.

Yours sincerely

Coralié Tait
Researcher
Tel: 012 420-5152
Cell: 082 411 0166
E-mail: coralie@up.ac.za



Prof. B. Louw
Head: Department Communication Pathology &
Research Supervisor
University of Pretoria



Miss C. Avenant
Research Supervisor
Department Communication Pathology
University of Pretoria

APPENDIX C

LETTER OF INFORMED CONSENT TO PARENTS

University of Pretoria

Pretoria 0002 Republic of South Africa Tel 012-420-2357
/ 012-420-2816 Fax 012-420-3517 http://www.up.ac.za

Department of Communication Pathology
Speech, Voice and Hearing Clinic

19 August 2004

Dear Parent of ……..

I am currently a speech-language therapist who is registered for a Masters degree at the Department of Communication Pathology, University of Pretoria. As part of the requirements of the degree, I am conducting a study in the Grade 4-classes of XXXXX Education College. The study involves the literacy skills of some of the children on a short test battery. These tests include aspects such as articulation, language, phonological awareness (alliteration and rhyming), hearing, spelling and reading.

The information obtained in this study will contribute to the knowledge of how to further the development of reading and spelling of multi-lingual learners in Grade 4.

The testing will be conducted on the school premises in a child-friendly manner, with the approval of the headmaster and the teacher. Your child's assent will be obtained as well. The children will not be aware of the reason for the evaluation or the scores obtained, but only that they are helping me with some important research that will help other children of their age. Testing is estimated to take approximately two-hours, spread over a two-week period and will be achieved with minimal disruption of class work. Please note that your child will neither benefit or be penalised by participating in the study.

Your child has been randomly selected from his / her group for this study. I will be very grateful if you will allow him / her to participate. If you are interested in the results of his / her test battery, I will gladly share it with you in confidence. For the purposes of the study, strict confidentiality will be observed throughout the research. A code

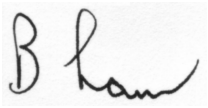
number will refer to each participant. The results of the study will be made available to the school, but they will be unaware of which subject is which. The data will be used for the purposes of this study and an academic article thereon, and will be kept for possible further research.

If you agree to allow your child to participate in this study, please take a few minutes to complete the attached questionnaire as completely as possible, and please remember to sign the informed consent form. Please return it in the sealed envelope provided by the class teacher by 1 September 2004.

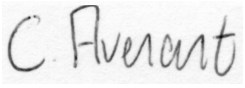
Thank you for your cooperation in allowing me to test your child. Should you enquire any further information I can be contacted at the following numbers during working hours:
Tel: 012 420-5152 or Cell: 082 411 0166

Yours sincerely

Coralié Tait
Researcher



Prof. B. Louw
Head: Department Communication Pathology &
Research Supervisor
University of Pretoria



Miss C. Avenant
Research Supervisor
Department Communication Pathology
University of Pretoria

APPENDIX D

LETTER OF INFORMED CONSENT TO THE PARTICIPANTS

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

University of Pretoria
Pretoria 0002 Republic of South Africa Tel 012-420-2357
/ 012-420-2816 Fax 012-420-3517 http://www.up.ac.za
Department of Communication Pathology
Speech, Voice and Hearing Clinic

LETTER OF ASSENT: PARTICIPANTS

- I understand that the tests will be used to help other learners to read and spell better.
- I understand that if I want to stop the tests I must tell Coralié and I don't have to carry on, and stopping will not upset my teacher or Coralié.
- I understand that my performance on these tests will not change my school marks.
- I understand that a number will be assigned to this information and Coralié will not use my name in the test results.

My Name

APPENDIX E

QUESTIONAIRE DIRECTED AT PARENTS

CONFIDENTIAL QUESTIONNAIRE

Dear Parent, please complete the questionnaire by filling in the relevant information and placing an X in the appropriate blocks.

1. Name of child: _____
2. Gender of child: Male ☐ Female ☐
3. Date of birth: _____
4. Home Language: _____
5. How long has your child attend XXX College? _____
6. Did he / she attend nursery school? Yes ☐ No ☐
   If yes, for how long? _____
7. Has he / she had middle ear infections? Yes ☐ No ☐
   If yes, approximately how many times? _____
   When was the last ear infection? _____
8. Has your child had any therapeutic intervention e.g.
   a) Speech Therapy Yes ☐ No ☐
   b) Occupational Therapy Yes ☐ No ☐
   c) Remedial Therapy Yes ☐ No ☐
   d) Other Therapy Yes ☐ No ☐

   If you have answered yes to any of the above interventions, please give details of type of therapy and areas treated if possible _____
   _____
9. Does your child use Ritalin or any other medication for an attention disorder?
   Yes ☐ No ☐
10. Does your child enjoy reading? Yes ☐ No ☐ Sometimes ☐
11. Does he / she read for pleasure? Yes ☐ No ☐ Sometimes ☐
12. Is there anything you would like to add regarding your child? _____
    _____

I, PARENT OF_____HEREBY GIVE CONSENT TO HIS / HER INCLUSION IN THE RESEARCH STUDY. I UNDERSTAND THAT MY CHILD'S IDENTITY, THE CONTENTS OF THIS QUESTIONNARE AND THE RESULTS OF THE STUDY WILL REMAIN CONFIDENTIAL.

Signed:_____ Date:_____

☺ Thank you for completing the questionnaire!

APPENDIX F

PERMISSION FROM THE SELECTED EDUCATIONAL COLLEGE TO CONDUCT RESEARCH AT THEIR INSTITUTION

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

College of Education

20 September 2004

Mrs. C. E. Tait
P.O. Box 503
Florida
1710

Dear Miss Tait

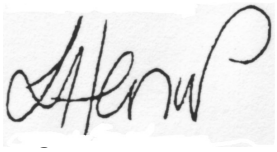
Re: Permission to conduct Research for the Communication Pathology Master's Degree at XXXXX Educational College

We, as The Management Body of XXXXX Educational College **give permission** to conduct this study during school hours in the final term of 2004.

We understand that:

- The study will involve fifteen Grade 4-learners. These learners will be evaluated by using a test battery including: a hearing screening, language and phonological awareness tests, and reading and spelling evaluations.
- The results will then be analyzed and conclusions drawn regarding the relationships between these various aspects, to determine the learners' phonological awareness in English.
- It is estimated that testing will take approximately two hours per learner. Testing will take place over a two-week period within school hours (the only time available as the learners' main mode of transport is by bus).
- Parents of the learners selected will be required to provide permission and to complete a short history information sheet.
- Assent to participate will also be obtained from each learner.

Yours sincerely



For **The Management Body**
Head: XXXXX Educational College (Primary Phase)

APPENDIX G

SCORE SHEET FOR PHONOLOGICAL SKILLS

Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1986)

Code number allotted to participant:…….

Articulation mistakes present:

Phonological Processes present:

Code1	☐	(No articulation mistakes present)
Code 2	☐	(Articulation mistakes present)
Code 3	☐	(Phonological Processes present)
Code 4	☐	(Articulation mistakes and Phonological Processes present)

APPENDIX H

INFORMAL READING DECODING AND COMPREHENSION TEST DESIGNED BY THE RESEARCHER

Informal Reading Decoding Test

Instruction: Please read this short story very carefully. You will need to answer questions later.

Thank you Bapsi! (Adapted from "Day-by-Day Reader-Grade 4")

Everyone in Bapsi's family is cross. The battery for the television is flat. Everyone is cross. No one wants to catch fish or play soccer, or make lunch – and all because of a stupid battery that got tired.

Just then Bapsi has an idea! Maybe he could go and get the battery charged! He puts the old, tired battery into his wire car. So he pulls his wire car and starts the journey to the big village.

At last he got to the shop. "Please can I change this old, tired battery with a new one?" He asks the shopkeeper. The shopkeeper takes the old battery and gives Bapsi a new one.

Bapsi drags the battery in the wire car and runs to his home. His family is very pleased when they see the new, fresh battery. Grandfather connects the television to the battery. Now everyone can watch television!

(148 words)

Informal Reading Comprehension Test

Instruction: Please circle the correct answers to the following questions:

1) Why is the family cross?

a. Because they cannot catch fish.
b. Because they cannot play soccer.
c. Because there is no lunch.
d. Because the battery is flat.
e. Because the dog bit Bapsi.

2) What got tired?

a. Bapsi, while walking to the town.
b. The stupid battery.
c. Grandfather.
d. The dog that bit Bapsi.

3) Who got the great idea?

a. Bapsi
b. Nelson Mandela
c. Grandfather
d. The shopkeeper

4) With what did he take the battery to the shop?

a. A taxi
b. A bus
c. An airplane
d. His wire car

5) What did Bapsi ask the shopkeeper?

a. To change the old battery with a new one.
b. For some sweets.
c. For milk and bread.
d. For the way to his house.

6) Who took the old battery from Bapsi?

a. Grandfather
b. The shopkeeper
c. Bapsi
d. The hi-jacker
e. The police man

7) What did the shopkeeper give Bapsi?

a. Sweets
b. Milk and bread
c. A soccer ball
d. A new battery

8) What did grandfather do with the new battery?

a. Put it in his taxi.
b. Put it in the kitchen window.
c. Gave it away.
d. Connected it to the television.

9) What could everyone do at the end of the story?

a. Watch television.
b. Go to school.
c. Go to the shop.
d. Go to the big village.

10) Who is the hero of this story?

a. The television
b. Bapsi
c. The shopkeeper
d. The dog

APPENDIX I

INFORMAL READING DECODING TEST DESIGNED BY THE RESEARCHER

Informal Reading Decoding Test

Code number allotted to participant:……

The child:	Yes	No
Omits words		
Selects wrong words		
Guesses words		
Repeats certain words		
Ignores punctuation		
Reads each word separately		
Sounds the words		
Sounds, but can't pronounce the words		
Has poor word recognition		
Points with finger		
Doesn't recognize the sounds		
Total **Yes** (used to determine whether the participant is a …… reader) ____		

The participant is a …….. reader

1	2	3	4	5
Very Poor 9, 10 or 11	**Poor** 6, 7 or 8	**Average** 3, 4 or 5	**Good** 1 or 2	**Excellent** 0

APPENDIX J

INFORMAL SPELLING TEST DESIGNED BY THE RESEARCHER

Informal Spelling Test

Instruction: Please write the following words on the page provided.

1. Highway
2. Seashore
3. Tideless
4. Skilful
5. Ventured
6. Supported
7. Voyages
8. Improvements
9. Adventures
10. Introduced

APPENDIX K

INFORMAL SCORE SHEET OF RAW DATA DESIGNED BY THE RESEARCHER

Informal Score sheet of Raw Data

Name of Participant:……..

Code number allotted to participant:……

1. Results of Hearing Screening Tests:

Tympanometry:

Ear	Pressure (-100 – +50daPa)	Compliance (0,3 – 1,75 ml)	Volume (1,0 – 1,5 cc/ml)	Type of Timpanogram
Right				
Left				

Oudiometry:

Ear	500Hz	1 000Hz	2 000Hz	4000Hz
Right				
Left				

Based on the results on the Hearing Screening Tests, may this participant be part of the selected participants? Yes/ No

2. Results of Golman-Fristoe Test of Articulation:

Code 1 ☐ (No articulation mistakes present)

Code 2 ☐ (Articulation mistakes present: ……...)

Code 3 ☐ (Phonological Processes present ……..……)

3. Results of Spelling test:

Mark out of 10: ……./10

4. Results of Reading Tests:

4.1 Results of Reading Comprehension Test

Mark out of 10: ……./10

4.2 Results of Reading Encoding Test

The participant is a Good…….Average…….Poor reader

5. Results of the Phonological Awareness Battery:

PhAb Test	Raw Score	Standardized Score	Profile
Alliteration Test			
Rhyme Test			
Spoonerisms Test			
Non-Word Reading Test			
Naming Speed Test (Pictures)			
Naming Speed Test (Digits)			
Fluency Test (Alliteration)			
Fluency (Rhyme)			

6. Results of the Clinical Evaluation of Language

6.1 Receptive Language

CELF Test	Participant's Score	Possible Score	Percentage Correct
Processing Word and Sentence Structure		52	
Processing Word Classes		44	
Processing Linguistic Concepts		44	
Processing Relationships and Ambiguities		64	
Processing Oral Directions		50	
Processing Spoken Paragraphs		34	

6.2 Expressive Language

CELF Test	Participant's Score	Possible Score	Percentage Correct
Producing Word Series: Item 1 (10 seconds): Item 2 (20 seconds):		 7 12	
Producing Word Associations	See Response Analysis	-	-
Producing Model Sentences		60	
Producing Formulated Sentences		96	

APPENDIX L

COMPLETE PHONOLOGICAL PROFILES FOR THE PARTICIPANTS WITH PHONOLOGICAL VARIATIONS

Phonological profiles for the participants with phonological variations

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
2	• [ɬ]: Voiceless, midalveolar-bladelingual, lateral fricative	Initial Final	rabbit - [ɹæbɪt] ring - [ɹɪŋ] tree – [tɹiː] scissors - [sɪzəz] car - [kʰɑː]	[ɬæbɪt] [ɬɪŋ] [t ɬiː] [sɪzə ɬ] [kɑː ɬ]
3	• [θ]: Voiceless, interdental-tiplingual, mid-oral fricative • [l̪]: Voiced, interdental-tiplingual, lateral liquid	Initial (I) Medial (M) Final (F) Initial Medial Final	sleeping - [sliːpɪŋ] finger - [fɪŋgə] stove - [stəːʊv] scissors - [sɪzəz] (I+M) telephone - [tɛləfəːʊn] matches - [mætʃəs] (M+F) christmas - [kɹɪsməs] house - [haʊs] knife – [naɪf] pencils - [pʰɛnsɪɬs] this - [ðɪs] that - [ðætʰ] pajamas - [pədʒɑːməs] lamp - [læmp] plane - [plɛɪn] blue - [bluː] flag - [flæːg] sleeping - [sliːpɪŋ] telephone - [tɛləfəːʊn] yellow - [jɛləʊ] wheel - [wiːɬ] shovel - [ʃʌvəɬ] pencils - [pʰɛnsɪɬs]	[θliːpɪŋ] [θɪŋgər] [θtəːv] [θɪθəz] [tɛləθəʊn] [mæθtʃəθ] kɹɪθməθ] [haʊθ] [naɪθ] [pɛnsɪ̪ɬθ] [ðɪθ] [ðæθ] [pədʒɑːməs] [l̪æmp] [p l̪ɛɪn] [b l̪uː] [f l̪æːg] [s l̪iːpɪŋ] [tɛl̪əfəʊn] [jɛ l̪əʊ] [wiː l̪] [ʃʌvə l̪] [pɛnsɪ l̪s]

Phonological profiles for the participants with phonological variations - cont.

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
4	• [ɬ]: Voiceless, midalveolar-bladelingual, lateral fricative	Initial	rabbit - [ɹæbɪt] ring - [ɹɪŋ] tree – [tɹiː]	[ɬæbɪt] [ɬɪŋ] [t ɬiː]
		Final	scissors - [sɪzəz] car - [k^{h}ɑː]	[sɪzə ɬ] [kɑː ɬ]
		Initial	thumb - [θʌm]	[fʌm]
	• [f]: Voiceless, labiodental, mid-oral fricative	Final	bath - [bɑːθ]	[bɑːf]

Phonological profiles for the participants with phonological variations – cont.

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
9	• [θ]: Voiceless, interdental-tiplingual, mid-oral fricative	Initial (I)	sleeping - [sliːpɪŋ]	[θliːpɪŋ]
			finger - [fɪŋgə]	[θɪŋgər]
			stove - [stəːʊv]	[θtəːv]
			scissors - [sɪzəz] (I+M)	[θɪθəz]
		Medial (M)	telephone - [tɛləfəːʊn]	[tɛləθəʊn]
			matches - [mætʃəs] (M+F)	[mæθtʃəθ]
		Final (F)	christmas - [kɹɪsməs]	kɹɪθməθ]
			house - [haʊs]	[haʊθ]
			knife – [naɪf]	[naɪθ]
			pencils - [pʰɛnsɪɬs]	[pɛnsn̪ɬθ]
			this - [ðɪs]	[ðɪθ]
			that - [ðætʰ]	[ðæθ]
			pajamas - [pədʒɑːməs]	[pədʒɑːməs]
			telephone - [tɛləfəːʊn]	[t̪ɛləfəʊn]
			stove - [stəːʊv]	[st̪əːv]
	• [t̪]: Voiceless, interdental-tiplingual, mid-oral stop	Initial	rabbit - [ɹæbɪt]	[ɹæbɪ t̪]
			carrot - [kʰæɹətʰ]	[kʰæɹə t̪]
		Final	lamp - [læmp]	[l̪æmp]
			plane - [plɛɪn]	[p l̪ɛɪn]
			blue - [bluː]	[b l̪uː]
	• [l̪]: Voiced, interdental-tiplingual, lateral liquid	Initial	flag - [flæːg]	[f l̪æːg]
			sleeping - [sliːpɪŋ]	[s l̪iːpɪŋ]
		Medial	telephone - [tɛləfəːʊn]	[tɛl̪əfəʊn]
			yellow - [jɛləʊ]	[jɛ l̪əʊ]
		Final	wheel - [wiːɬ]	[wiː l̪]
			shovel - [ʃʌvəɬ]	[ʃʌvə l̪]
			pencils - [pʰɛnsɪɬs]	[pɛnsɪ l̪s]

Phonological profiles for the participants with phonological variations – cont.

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
10	• [l̪]: Voiced, interdental-tiplingual, lateral liquid	Initial	lamp - [læmp] plane - [plɛm] blue - [bluː] flag - [flæːg] sleeping - [sliːpɪŋ]	[l̪æmp] [p l̪ɛm] [b l̪uː] [f l̪æːg] [s l̪iːpɪŋ]
		Medial	telephone - [tɛləfəːʊn] yellow - [jɛləʊ]	[tɛl̪əfəʊn] [jɛ l̪əʊ]
		Final	wheel - [wiːɬ] shovel - [ʃʌvəɬ] pencils - [p^{h}ɛnsɪɬs]	[wiː l̪] [ʃʌvə l̪] [pɛnsɪ l̪s]
	• [ɬ]: Voiceless, midalveolar-bladelingual, lateral fricative	Initial	rabbit - [ɹæbɪt] ring - [ɹɪŋ] tree – [tɹiː]	[ɬæbɪt] [ɬɪŋ] [t ɬiː]
		Final	scissors - [sɪzəz] car - [k^{h}ɑː]	[sɪzə ɬ] [kɑː ɬ]

Phonological profiles for the participants with phonological variations – cont.

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
11	• [l̪]: Voiced, interdental-tiplingual, lateral liquid	Initial	lamp - [læmp] plane - [plɛɪn] blue - [bluː] flag - [flæːg] sleeping - [sliːpɪŋ]	[l̪æmp] [p l̪ɛɪn] [b l̪uː] [f l̪æːg] [s l̪iːpɪŋ]
		Medial	telephone - [tɛləfəːʊn] yellow - [jɛləʊ]	[tɛl̪əfəʊn] [jɛ l̪əʊ]
		Final	wheel - [wiːɬ] shovel - [ʃʌvəɬ] pencils - [p^{h}ɛnsɪɬs]	[wiː l̪] [ʃʌvə l̪] [pɛnsɪ l̪s]
	• [ɮ]: Voiced midalveolar-bladelingual, lateral fricative	Medial	brush - [bɹʌʃ]	[bɮʌʃ]
		Final	drum - [dɹʌm] carrot - [k^{h}æɹət^{h}] orange - [ɒrɪnʒ]	[dɮʌm] [k^{h}æɮət^{h}] [ɒɮɪnʒ]
		Medial	fishing - [fɪʃɪŋ]	[fɪtʃɪŋ]
	• [tʃ]: Voiceless, frontpalatal-frontlingual, mid-oral affricate	Final	brush - [bɹʌʃ]	[bɹʌtʃ]

Phonological profiles for the participants with phonological variations – cont.

Participant	Elicited sound and abridged phonetic definition	Word Position	Word with test sound/s and phonetic form	Elicited phonetic form
12	• [ɬ]: Voiceless, midalveolar-bladelingual, lateral fricative • [ɮ]: Voiced midalveolar-bladelingual, lateral fricative	Final Medial Final	scissors - [sɪzəz] car - [k^{h}ɑː] brush - [bɹʌʃ] drum - [dɹʌm] carrot - [k^{h}æɹət^{h}] orange - [ɒɹɪnʒ]	[sɪzə ɬ] [kɑː ɬ] [bɮʌʃ] [dɮʌm] [k^{h}æɮət^{h}] [ɒɮɪnʒ]

APPENDIX M

READING DECODING LEVELS OF PARTICIPANTS

Table 2: Reading decoding level of each participant *(n=15).*

Participant	Decoding	
	Performance	Number of decoding errors
1.	Average	4
2.	Very poor	10
3.	Average	5
4.	Average	3
5.	Good	2
6.	Good	2
7.	Good	2
8.	Average	3
9.	Average	4
10.	Average	5
11.	Poor	6
12.	Poor	6
13.	Good	2
14.	Average	4
15.	Good	2

APPENDIX N

ERRORS MADE BY THE PARTICIPANTS IN THE SPELLING TEST

Table 3: Errors made by the participants in the spelling test.

Participant	Target word/s	"Errors"
1.	Supported	suported
2.	supported, adventures, introduced, voyages, improvements	suppontend, advertureds, in, voyeges, im
3.	Skilful supported introduced ventured adventures	skulful, sepoted, intiduted, venched, adveches
4.	-	-
5.	Introduced	inroduced
6.	Voyages	voyeges
7.	-	-
8.	Introduced	introduecd
9.	Introduced	introduct
10.	Highway tideless ventured supported voyages adventures introduced	highwy, tidelese, ventude, sappoted, vayeges, adventsas, idradust
11.	seashore voyages tideless adventures introduced	seeshore, veggas, teddeless, adeventured, intredes
12.	introduced skilful ventured voyages improvements adventures	introguse, skulful, venched, vogyse, improufmenst, adveacurs

Participant	Target word/s	"Errors"
13.	Highway tideless seashore supported voyages improvements introduced	hogway, tiddles, seoshore, saported, voyagas, improvments, inroduced
14.	seashore improvements	seashor, improvemeets
15.	-	-

APPENDIX O

CORRELATIONS OF THE RESULTS OF THE VARIOUS TESTS USED

Table 4: Correlations drawn between articulation and PhAB-subtests, by using the Mann-Whitney Test *(n=15).*

PHAB-subtests	Correlated with articulation
Alliteration	0,4638
Rhyme	0,2006
Spoonerisms	0,0551
Non-word reading	0,1447
Picture naming	0,1348
Digit Naming	0,1176
Alliteration Fluency	0,1314
Rhyme Fluency	0,1276
Semantic Fluency	0,6398
PHAB	0,0279

Table 5: Correlations drawn between Receptive Language and the PHAB-subtests by using Spearman Correlation Coefficients *(n=15).*

PHAB-subtests	Correlated with Receptive Language
Alliteration	0,4258
Rhyme	0,5872
Spoonerisms	0,0119
Non-word reading	0,4433
Picture naming	0,1045
Digit Naming	0,1103
Alliteration Fluency	0,4038
Rhyme Fluency	0,2508
Semantic Fluency	0,2779
PHAB	0,0284

Table 6: Correlations drawn between Expressive Language and the PhAB-subtests by using Spearman Correlation Coefficients *(n=15).*

PHAB-subtests	Correlated with Expressive Language
Alliteration	0,4926
Rhyme	0,5391
Spoonerisms	0,0314
Non-word reading	0,2070
Picture naming	0,0219
Digit Naming	0,0205
Alliteration Fluency	0,0131
Rhyme Fluency	0,2032
Semantic Fluency	0,3223
PHAB	0,0103

Table 7: Correlations drawn between reading encoding and PhAB-subtests by using the Mann-Whitney Rank sum Test *(n=15).*

PHAB-subtests	Correlated with Reading Encoding
Alliteration	0,1705
Rhyme	0,2174
Spoonerisms	0,0204
Non-word reading	0,0495
Picture naming	0,3706
Digit Naming	0,0509
Alliteration Fluency	0,3110
Rhyme Fluency	0,1951
Semantic Fluency	0,8268
PHAB	0,0304

Table 8: Correlations drawn between Reading Comprehension and the PhAB-subtests by using Spearman Correlation Coefficients *(n=15).*

PHAB-subtests	Correlated with Reading Comprehension
Alliteration	0,9092
Rhyme	0,8023
Spoonerisms	0,5400
Non-word reading	0,8443
Picture naming	0,8785
Digit Naming	0,4297
Alliteration Fluency	0,4141
Rhyme Fluency	0,5518
Semantic Fluency	0,9913
PHAB	0,9598

Table 9: Correlations drawn between Spelling and the PhAB-subtests by using Spearman Correlation Coefficients *(n=15).*

PHAB-subtests	Correlated with Spelling
Alliteration	0,516
Rhyme	0,0803
Spoonerisms	0,0051
Non-word reading	0,6939
Picture naming	0,1566
Digit Naming	0,0542
Alliteration Fluency	0,9456
Rhyme Fluency	0,0157
Semantic Fluency	0,7827
PHAB	0,0358