AUDITORY SKILLS AND LISTENING COMPREHENSION IN ENGLISH SECOND LANGUAGE LEARNERS IN GRADE 1

by

Kate-Lyn Anderssen

13066456

A dissertation submitted in fulfilment of the requirements for the degree

MA Speech-Language Pathology

in the

DEPARTMENT OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

FACULTY OF HUMANITIES

at the

UNIVERSITY OF PRETORIA

Supervisors:

Prof. Alta Kritzinger and Dr Lidia Pottas

November 2017

Declaration of originality

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Humanities
Department of Speech-Language Pathology and Audiology

DECLARATION OF ORIGINALITY

UNIVERSITY OF PRETORIA

The Department of **Speech-Language Pathology and Audiology** places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

While academic staff teaches you about referencing techniques and how to avoid plagiarism, you too have a responsibility in this regard. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (e.g. a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim), but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it. You are not allowed to use work previously produced by another student. You are also not allowed to let anybody copy your work with the intention of passing if off as his/her work.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the Department of **Speech-Language Pathology and Audiology**. No written work will be accepted unless the declaration has been completed and attached.

Full names of student: **Kate-Lyn Anderssen**

Student number: **13066456**

Topic of work: **Auditory skills and listening comprehension in English second language learners in Grade 1**

Declaration

1. I understand what plagiarism is and am aware of the University's policy in this regard.

2. I declare that this **dissertation** is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

3. I have not used work previously produced by another student or any other person to hand in as my own.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

SIGNATURE .....

DATE .....

Acknowledgements

I would like to give my sincere thanks to:

- My Heavenly Father for giving me this opportunity to further my studies and for the incredible journey You have lead me on this year. “For with God nothing [is or ever] shall be impossible” – Luke 1:37.

- My supervisors, Prof. Kritzinger and Dr Pottas, a million times thank you. Thank you for your knowledge and expertise you were more than willing to provide. Thank you for unconditional support and dedication in assisting me to achieve academic goals I never thought possible. Thank you uplifting and encouraging me during my struggles and thank you for celebrating and sharing my excitement with my achievements. Thank you for helping me to become the therapist I know I am capable of being and for the role you have played in shaping my future.

- The children, teachers and principals of the two schools involved that were involved in my study. Everyone involved was so accommodating and enthusiastic to participate in the research study and for that I am grateful. You all made it easy to remember why I want to be a speech-language therapist.

- My family for your unconditional love and support. You have all helped to keep me grounded and focused this year. Knowing how proud you are of me means more than you will ever know. A special thank you to my mom and dad for giving me the opportunity to get my MA degree this year. I am grateful every day for everything you have done and continue to do for me. I love you always and no matter what.

- Stephanie Oosthuizen, the best roommate. You have encouraged me every day to keep working hard. You have seen me on my best day, my worst days, the in between days and you have put up with it all. Our dinners, conversations and constant laughing helped me immensely.

- My best friend Erantia. I will always feel blessed to have you as my person. You have taught me so much since we met and I appreciate the big and the small things you are always doing for me. No matter where life takes us, you will always be my favorite and a phone call away.

Abstract

UNIVERSITY OF PRETORIA

DEPARTMENT OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

Initials and surname	K. Anderssen
Supervisors	Prof. A. Kritzinger Dr L. Pottas
Date	November 2017
Title	Auditory skills and listening comprehension in English second language learners in Grade 1

Abstract

Background: Studies indicate that difficulties English second language (ESL) learners experience in the classroom may not only be attributed to listening comprehension of the language of learning and teaching (LoLT). Limited research is available on the auditory skills and listening comprehension in ESL learners younger than 12 years.

Aim: To determine which areas of auditory skills and listening comprehension Grade 1 ESL learners experienced most difficulty with.

Method: A static two-group comparison design was used. Data were collected at two similar independent urban schools from learners between the ages of 72-90 months. The research group were ESL learners (n=15) exposed to English for 12-18 months. The control group were English first language (EFL) learners (n=15). The Digits-in-noise (DIN), Children's Auditory Processing Performance Scale (CHAPPS), and Listening Comprehension Test 2 (LCT-2) were used. Six Grade 1 teachers participated in the study.

Results: Majority of the participants (n=25) passed the DIN, however, despite having normal hearing some EFL (n=1) and ESL (n=4) participants failed the test. In the overall scores for the CHAPPS and LCT-2, significant differences were found between the two groups (p= 0.024; p=0.001). Strong agreements were found between the ESL participants' test results for the CHAPPS and LCT-2, indicating that they experience significant difficulties with higher linguistically dependent auditory skills and listening comprehension tasks.

Conclusion: ESL participants achieved poorer scores as the listening tasks became more linguistically demanding. Specific layers of auditory skill and listening comprehension difficulties when listening in their LoLT were identified in the ESL learners. Targeted intervention and curriculum support with a speech-language therapist can be given.

Keywords

Auditory skills, listening comprehension, Grade 1 learners, English second language, Digits in Noise test, Children's Auditory Processing Performance Scale, Listening Comprehension Test-2

List of Tables and Figures

List of Abbreviations

AoA – Age of acquisition

CALP – Cognitive academic language proficiency

CHAPPS – Children's Auditory Processing Performance Scale

DIN – Digits-in-Noise

EFL – English first language

ESL – English second language

L1 – First language

L2 – Second language

LCT-2 – Listening Comprehension Test 2

LoLT – Language of learning and teaching

SD – Standard deviation

SES – Socioeconomic status

SLA – Second language acquisition

SLTs – Speech-language therapists

SNR – Signal-to-noise ratio

Table of Contents

CHAPTER 1

Introduction

The aim of this chapter is to introduce the research topic of the study and its relevance. Literature regarding the auditory skills and listening comprehension of English second language (ESL) learners will be critically discussed in order to justify the problem statement and rationale for the study. The problem statement is that there is a paucity in research regarding the layered components of auditory skills and listening comprehension in ESL learners under the age of 10. Terms used in the dissertation will be clarified in this chapter.

1.1. Introduction

An English second language (ESL) learner refers to an individual learning the English language subsequent to their first language (Saville-Troike, 2012). While ESL is a world-wide phenomenon among individuals of all ages, there is a particular focus on school-going children. In a recent study 22.2% of American children, aged between five and 17 years, spoke a language other than English (US Census Bureau, 2015). It is estimated that 15.2% of primary school children in the United Kingdom speak a first language other than English (Tabri, Chacra & Pring, 2011) and in Australia 19% of the population are not English first language (EFL) speakers (Clifford, Rhodes & Paxton, 2014).

In a country with 11 official languages such as South Africa the figures are almost reversed. A survey conducted in South Africa indicated that in 2007, 65.3% of South African learners were enrolled in schools where the language of learning and teaching (LoLT) is English (Department of Basic Education, 2010), yet only 9.6% of the population are EFL speakers (Statistics South Africa, 2011). This indicates that more than 50% of learners in South Africa could be ESL learners. In order to succeed in an academic environment, learners need to be able to understand and use classroom discourse which includes the educator's verbal instructions and lessons, as well as written text (van Rooyen & Jordaan, 2009). Learners are therefore required to develop adequate language skills in speaking, listening, reading, and writing in their LoLT in order to attain cognitive academic language

proficiency (CALP) necessary for academic learning. In many low-to-middle income countries such as South Africa, ESL learners have not developed sufficient CALP in their second language (L2) for successful academic learning upon school entry (Taylor & von Fintel, 2016).The need for systematic enquiry with regards to the difficulties ESL learners face in the classroom is clearly necessary and relevant.

Globally it is acknowledged that language proficiency and competence play a key role in academic achievement (Hoff, 2006; Owens, 2012). Second language acquisition (SLA) is the simultaneous or sequential process of learning an additional language (Saville-Troike, 2012). SLA is a complex process which involves a series of evolving interlanguage systems thought to be initially consistent and rule-governed where learners consciously or unconsciously attempt to construct a language system in order to understand and produce utterances in the L2 (Song, 2012). As a result traditional theories of SLA appear to have originated from general linguistic theory, occasionally supplemented by insights from psychology (Richards, 2015). Although current theories of SLA are more insightful than previously, there are still few increases in evidence in the descriptive or explanatory powers of these theories (Richards, 2015). There are many factors that may influence the SLA in learners including, language transfer, intra-lingual interference, sociolinguistic situation, age and exposure to L2 (Richards, 2015).

The age of first exposure to an L2 often exerts a strong and persistent influence on overall success in a learners' SLA (Flege, Schirru & MacKay, 2003). Neural representations of an L2 may differ from that of an individual's first language [L1] (Nichols & Joanisse, 2016). Due to changes in neural plasticity of individuals as they grow older late L2 learning requires increased neural resources (Abutalebi, 2008). This statement is supported by research conducted by Perani and Abutalebi (2005). They suggest that individuals with an early L2 age of acquisition (AoA) show similar patterns of brain activity to their L1 compared to late L2 learners. In contrast, Richards (2015) stated that various aspects of children's learning capacities are altered as they grow older. Memory span increases with age allowing children to acquire more abstract concepts which are used to interpret their experiences (Richards, 2015). Although neural plasticity may decrease with age, an increased memory span may aid late L2 in achieving successful SLA.

Richards (2015) also explains how language transfer and intra-lingual interference plays a role in SLA. These two factors explore how aspects in an individual's L2 may be influenced by their L1. Borodkin and Faust (2014) propose that perhaps the most notable predictor of L2 proficiency is the strength of the learner's L1 skills, especially phonological skills. It has been shown that L1 phonological skills are related to L2 phonological skills, literacy skills, oral competence, listening comprehension, grammatical knowledge, and overall L2 proficiency (Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Kahn-Horwitz, Shimron, & Sparks, 2005; Leikin, Schwartz, & Share, 2009; Lindsey, Manis, & Bailey, 2003; O'Brien, Segalowitz, Collentine, & Freed, 2006; O'Brien, Segalowitz, Freed, & Collentine, 2007). In addition to AoA of the L2 and other linguistic factors, individual difference in ESL learners must be taken into account when examining SLA.

The sociolinguistic situation of each individual is an important factor to consider (Richards, 2015) due to the current immigration and ESL statistics in South Africa. Different settings for language use result in different degrees and types of language learning (Richards, 2015). An individual's sociolinguistic situation involves the effects of learner's motivation, their socio-cultural setting, and their socioeconomic status (SES) on SLA (Buckingham, Beaman & Wheldall, 2014; Richards, 2015). Buckingham et al. (2014) stated that learners from a low SES are more likely to experience less stimulating home environments which may have an effect on their cognitive and academic development. Due to inadequate learning experiences at home or poor quality preschool education, a significant number of South African learners have not reached the required level of school readiness to manage with formal learning introduced in Grade 1 (Landsberg, Kruger & Nel, 2011). Such children might enter school with poorly developed language skills in comparison to their middle-class peers and in turn fall behind academically as they progress through school grades (Raizada, Richards, Meltzoff & Kuhl, 2008). The influence of the learner's L1 on their L2 may therefore vary according to their sociolinguistic situation (Richards, 2015).

The complexity of the SLA process is evident and there are many influencing variables that need to be considered. Listening comprehension is a key component

of language acquisition that has only recently been investigated (Vandergrift & Baker, 2015). Vandergrift (2004) explains how learners, especially when learning an L2, should learn to listen so they can better listen to learn. When a learner actively listens the rules of that language are internalized and the emergence of other language skills is facilitated such as L2 vocabulary and discourse skills (Vandergrift, 2011). Other authors also emphasize listening as a fundamental skill in SLA (Chang, 2009; Yilmaz & Yavuz, 2015). Research has shown that a key difference between more and less successful L2 learners is their ability to use listening skills as a means of language acquisition (Vandergrift, 1999).

Listening is an interactive, cognitive process which involves neurological, linguistic, semantic, and pragmatic processing (Rost, 2011). These processes concurrently involve drawing on resources such as linguistic knowledge, world knowledge, and knowledge about the communicative context (Rost, 2011). In both natural and structured activities auditory skills are essential to integrate, interpret and comprehend auditory or linguistic information which are interrelated and overlapping (Cole & Flexer, 2015). According to Cole and Flexer (2015) auditory skills compromise of attending to and detecting auditory information, localizing and disregarding competing stimuli, discriminating, identifying, categorizing and associating the information with other similar items, as well as involving memory and retrieval. Comprehension of a spoken message during communication interaction occurs when listeners can infer what is said, based on their linguistic background and contextual knowledge (Chang, Wu & Pang, 2013).

In addition to auditory skills, Vandergrift (2004) suggests that successful L2 listening comprehension involves the efficient and balanced operation of top-down and bottom-up processes. Bottom-up processing describes activities based on input from the senses and other low-level aspects of the nervous-system function while top-down processing is high-level activities that originate within the brain – usually the cerebral cortex (Coplan, 2010). Bottom-up processing involves decoding auditory input by segmenting the sounds heard into meaningful units (Vandergrift, 2011). When listeners utilize bottom-up processing they construct meaning by gradually combining increasingly larger units of meaning from the phoneme-level up to discourse-level features (Vandergrift, 2011). Vandergrift (2011) explains how top-

down L2 processing makes use of context and prior knowledge in order to build a conceptual framework. To activate a conceptual framework to interpret the auditory input, listeners make use of initial cues in the input or the context of the listening act (Vandergrift, 2011). Bottom-up auditory processing of an incoming signal may be compromised due to increased task demands or poor listening conditions. When this occurs, top-down processing may enable compensation by making allowance for knowledge stored in the long-term memory to be accessed (Pichora-Fuller, 2008; Vandergrift, 2004). Knowledge stored in long-term memory may include topic, genre, culture and other schemas. Joining this bottom-up and top-down input assists the listener to anticipate and resolve the distorted incoming information (Pichora-Fuller, 2008). Figure 1 provides an illustration of the top-down bottom-up processes which support effective listening comprehension.

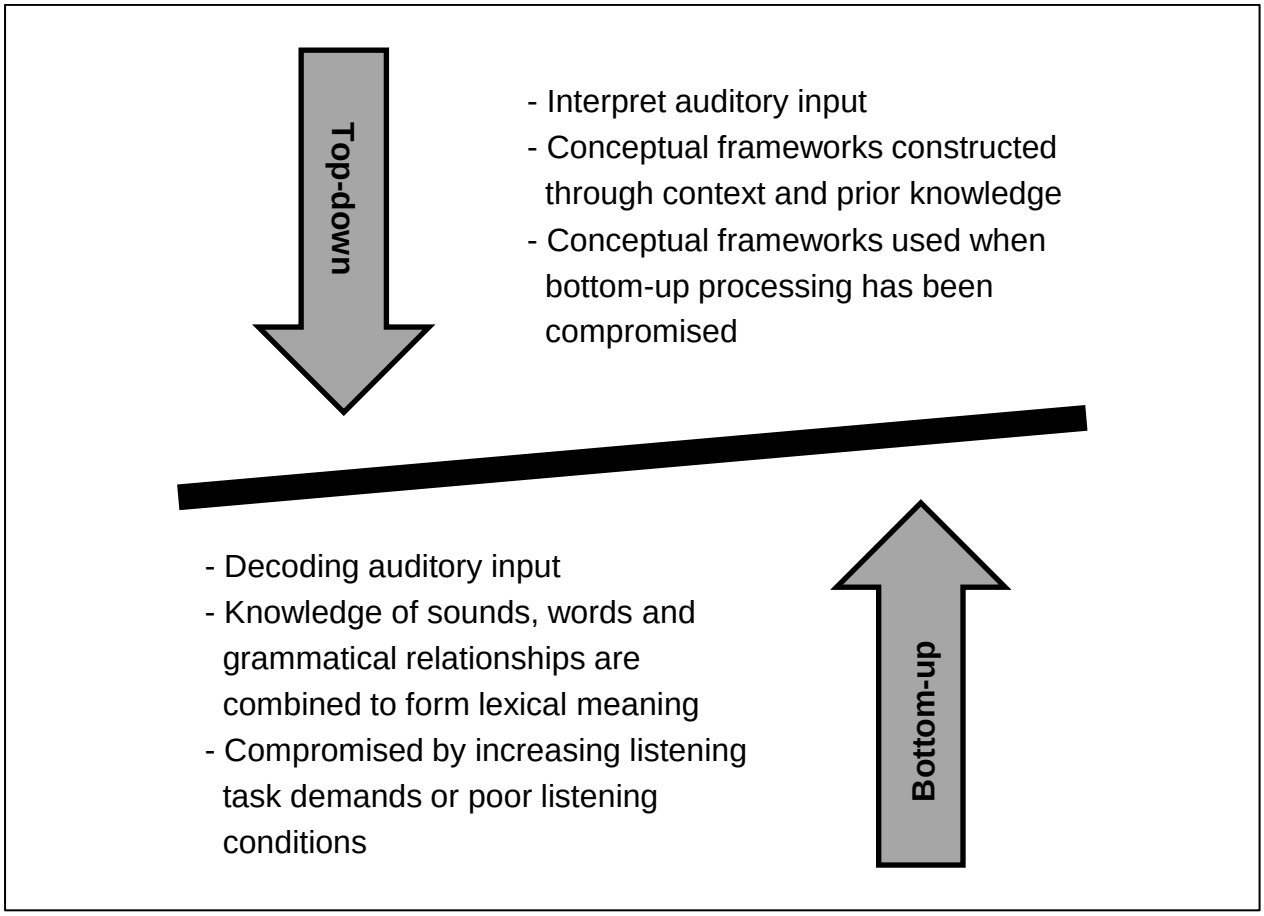

Figure 2: Top-down and bottom-up processes using auditory skills to achieve effective listening comprehension

The process of successful listening comprehension is highly automatized in proficient listeners as little or no conscious attention is required (Brunfaut & Revesz, 2015). L2 listeners commonly lack harmonious top-down and bottom-up processing (Yeldham, 2016) and therefore may experience difficulties with their auditory skills and listening comprehension abilities. ESL learners who have limited L2 knowledge experience listening as a more taxing and less automated process (Brunfaut & Revesz, 2015). Yeldham (2016) suggests that listening difficulties experienced by ESL learners may be cognitive in nature. This results in the inability to recognize the words of L2, concentrate and keep up with the speaker, and to construct and recall meaning (Yeldham, 2016). These difficulties experienced by ESL learners further impacts their listening skills negatively (Yeldham, 2016). Poor listening can result in poor SLA while poor SLA can be caused by poor listening abilities.

Vandergrift and Baker (2015) emphasize the paucity in research with regards to the variables contributing to the development of individuals' L2 listening ability. Research in the difficulties that ESL learners experience and factors influencing their auditory skills and listening comprehension abilities have only recently emerged. A number of factors associated with the characteristics of the listener and various listening tasks have been investigated and proposed to cause difficulties in auditory skills and listening comprehension for ESL learners (Brunfaut & Revesz, 2015). A survey conducted by Chang et al. (2013) indicated that 73% of the ESL students (ages 18-19 years, whose first language is Chinese) who answered a questionnaire perceived listening to the English language as challenging. A study conducted by Goh (1999) highlighted vocabulary, speech rate, input text (e.g. lectures, radio broadcasts, face-to-face conversations) and a speaker's accent as being the major sources of listening difficulties experienced by ESL university students in Singapore.

Chang et al. (2013) stressed that the auditory input may be the most important factor contributing to ESL participants' listening difficulties. A significant number of participants (28%) indicated that utterances were difficult to understand when they contained unknown words, difficult grammatical structures, unfamiliar topics, abstract concepts, and long sentences. The majority (75%) of participants strongly agreed that unfamiliar vocabulary made their listening difficult. Chang et al. (2013) also discussed concerns related to the input channel (such as listening through

headphones rather than listening through a room speaker in a lecture hall) and auditory environment of ESL listening, where 50% of the participants indicated that they preferred a loud and clear input from the speaker through headphones.

A study conducted in Glasgow aimed to determine the effectiveness of listening comprehension of familiar and unfamiliar native accents (Adank, Evans, Stuart-Smith & Scotti, 2009). Results obtained from the participants (ranging between the ages of 19-35 years) indicated that the familiarity with the speaker's accent benefits the listener under adverse listening conditions such as listening in noise (Adank et al., 2009). Moodley, Kritzinger and Vinck (2016) found that ESL learner competencies in English speaking and listening was influenced by the age and qualifications of the teacher as well as their L1. The speaking and listening scores of South African ESL Grade R learners' (whose L1 is isiNdebele) were higher when taught by isiNdebele teachers than taught by siSwati, isiZulu, Xitsonga and Sepedi speaking teachers talking English (Moodley, Kritzinger, & Vinck, 2014). It appears that the IsiNdebele language contains many loanwords from English, resulting in teachers possibly supporting ESL learners better (Moodley et al., 2014).

Research has shown that certain environmental factors such as classroom noise may affect learner's attention and speech perception, thereby negatively influencing their auditory skills and listening comprehension (Nelson, Kohnert, Sabur & Shaw, 2005). High levels of reverberation and noise have also been shown to negatively affect speech perception, classroom attention, concentration, and educational achievement (American Speech-Language-Hearing Association [ASHA], 2005). Studies have shown that ESL learners experience more difficulty perceiving speech in noise and reverberation as opposed to EFL learners (Tabri et al., 2011). A study conducted by Nelson et al. (2005) illustrated the impact of noise on children's ability to discriminate between similar sounding word pairs. The results from the data clearly indicated that ESL learners and EFL learners both performed poorly in noise. The classroom noise did however have a significantly greater impact on the ESL learners' performance (Nelson et al., 2005). AoA of L2 also affects individual ability to perceive speech in both noise and quiet conditions (Shi, 2010).

Signal redundancy should also be considered in the presence of a noisy listening environment. Signal redundancy refers to the clues in the identity of linguistic elements in an utterance and is associated with recognition likelihood (Turk, 2010). Turk (2010) stated that redundancy ensures robust and efficient communication in a potentially noisy environment. Aylett and Turk (2004) found that smooth signal redundancy is achieved through an inverse relationship between language redundancy and acoustic redundancy. The greater the language redundancy, the less acoustic redundancy is required. Language redundancy refers to lexical, syntactic, semantic and pragmatic clues to the identity of linguistic elements (Turk, 2010). Acoustic redundancy involves clues to the identity of linguistic elements based on acoustic salience (Turk, 2010). This inverse relationship suggests that speakers should produce high acoustic saliency for unfamiliar sections of an utterance, and less saliency when predictability is high when taking the listener into account (Turk, 2010). However, research indicates that speech is often produced without much attention to listener requirements (Schafer, Speer & Warren, 2004). Therefore poor signal redundancy may negatively impact auditory skills and listening comprehension in ESL learners, especially when listening in noise.

In addition to understanding listening task factors that negatively affect ESL learners' auditory skills and listening comprehension abilities, the educational approach, personal characteristics and listener-related factors are also important to consider. Moodley et al. (2014) also found that formal English instruction, as opposed to a play-based approach, contributed significantly to the speaking and listening skills of Grade R ESL learners (Moodley et al., 2014). It appears that limited studies have addressed listener-related characteristics such as cognitive factors and affective factors (Brunfaut & Revesz, 2015). One important cognitive factor influencing listening comprehension in ESL learners is working memory. The ability to integrate real time information from various knowledge sources, in order to achieve successful listening comprehension is a highly automatized process in proficient listeners. In ESL learners this is a conscious process where increased control is required with the implication that successful listening comprehension may not be achieved (Brunfaut & Revesz, 2015). Buck (2001) suggested that this may lead to partial comprehension or misconception by ESL learners when listening. Affective problems such as anxiety and lack of control over one's listening may also be experienced by ESL learners

(Yeldham, 2016). Listening anxiety has been hypothesized to decrease when improved listening competence was achieved (Chang, 2010). Chang's hypothesis (2010) proved to be incorrect as the results indicated that reducing listening anxiety did not simply lead to an improvement in listening competence. The results obtained from the Listening Anxiety Questionnaire suggest that mild to moderate listening anxiety levels may have a facilitating effect on listening comprehension (Chang, 2010). According to Chang (2010), listening anxiety should not be considered a serious contributing factor to difficulties experienced by ESL learners unless their anxiety is debilitating.

In summary, a large number of factors can contribute or detract from SLA. Auditory skill and listening comprehension are key interrelated components of SLA and also an important prerequisite for academic success (Vandergrift & Baker, 2015). Although the body of knowledge with regards to ESL listener characteristics and listening task difficulties is ever increasing, there still remains a gap in our knowledge about ESL listening comprehension abilities and auditory skills in their LoLT.

1.2. Problem statement and rationale

Most research exploring listening task characteristics and listener-related factors has been conducted in Taiwan and the United States. The number of ESL learners in South Africa is significantly higher than in the United States and other countries (Department of Basic Education, 2010). This suggests that the data collected from South African learners will contribute to existing research in ESL listening comprehension abilities. The majority of participant groups investigated in previous research studies investigating the listening comprehension abilities of ESL learners vary from Grade 4 learners to university students. Very few studies describing the listening comprehension abilities of younger ESL learners are available, specifically with regards to Grade 1 ESL learners. This gap in knowledge of young ESL learners is concerning as this is the age in which learners are required to have developed CALP in their LoLT. There is clear evidence from the studies conducted that older ESL learners experience a wide spectrum of listening difficulties.

The evidence indicates that it will be beneficial to determine the auditory skills and listening comprehension abilities of Grade 1 ESL learners. Due to the paucity in research regarding the layered components of auditory skills and listening comprehension in ESL learners under the age of 10, difficulties experienced by this population may go undetected or only be identified later in their academic career. Without adequate preventative intervention to facilitate their auditory skills and listening comprehension, these ESL learners' academic progress and achievement may be negatively impacted.

Therefore, the aim of the study was to determine which areas of auditory skill and listening comprehension Grade 1 ESL learners experience most difficulty with.

By understanding factors that create challenges for ESL learners' auditory skills and listening comprehension, speech-language therapists (SLTs) and educational audiologists can provide necessary and comprehensive training to the teachers of these ESL learners. Training may involve educating teachers to identify difficulties ESL learners may be experiencing with regards to auditory skills, generating strategies to reduce noise in the classroom and improve the quality of auditory input signals provided. Listening comprehension difficulties may also be addressed by increased awareness of strategies to enhance listening comprehension. This will aid in creating optimal conditions for proficient listening which may improve ESL learners' auditory skills and listening comprehension, improved SLA and English language proficiency, and may result in enhanced academic progress.

The results obtained from the research study may contribute to the emerging research in understanding the auditory skills and listening comprehension in ESL learners.

1.3. Clarification of terms used in the dissertation

> **Auditory skills**: Interrelating and overlapping auditory components that are essential to integrating, interpreting and comprehending auditory or linguistic information produced by others (Cole & Flexer, 2015).

Cognitive academic language proficiency (CALP): The language proficiency required to be used in formal or academic situations where language occurs without context and is thus more cognitively demanding than basic interpersonal communication skills (Aukerman, 2007; Hoff, 2006).

First Language (L1): A language acquired during early childhood usually before the age of three years (Saville-Troike, 2012).

Listening comprehension: An active process of constructing meaning in which listeners attend to and process auditory information in order to understand the message and make necessary inferences implied in the input (Buck, 2001).

Language of learning and teaching (LoLT): The language used and developed academically in order to learn (Jordaan, 2011).

Second Language (L2): An official or societally dominant language acquired subsequent to the first language, which is deemed necessary to meet basic social, academic, political or economic needs (Saville-Troike, 2012).

Second Language Acquisition: The simultaneous or sequential process of learning an additional language subsequent to the first language. Simultaneous bilingual learning is when L2 is acquired before three years of age, and sequential L2 learning is acquiring the L2 after age three (Owens, 2012).

Chapter 2

Method

The aim of this chapter is to provide a comprehensive description of the research design employed in the study to determine the listening abilities of English second language learners in Grade 1. The aims and objectives of the study will be discussed and the ethical considerations, study participants, data collection and analysis procedures will be described and justified in this chapter.

2.1. Aim

The aim of the study was to determine which areas of auditory skill and listening comprehension Grade 1 ESL learners experience most difficulty with.

2.2. Research design

A quantitative, cross-sectional research design was employed for this study. The quantitative research paradigm involves using formalized tests and measuring instruments to accurately and objectively specify the characteristics of data in numerical terms (Maxwell & Satake 2006). The Digits-in-Noise (DIN) test (Potgieter, Swanepoel, Myburgh, Hopper & Smits, 2016), Children's Auditory Processing Performance Scale [CHAPPS] (Smoski, Brunt & Tannahill, 1998) and Listening Comprehension Test 2 [LCT-2] (Bowers, Huisingh & LoGuidice, 2006) provided numerical values for the participants' scores allowing for their auditory skills and listening comprehension abilities to be quantified.
The study encompassed a cross-sectional design as the data were collected from a population, or a representative subset, at one specific point in time (Maxwell & Satake, 2006).

Simultaneously a comparative and correlational research design was adopted as participants selected for the study were assigned to either the control group (EFL learners) or the research group [ESL learners] (Leedy & Ormrod 2014). The study therefore used a static two-group comparison design to determine the influence of a specific variable, in this case ESL learning, on auditory skills and listening comprehension (Leedy & Ormrod, 2014).

2.3. Ethical considerations

According to the Department of Health (2015) ethical principles assists the Research Ethics Committee (REC) to recognise and safeguard the interests of participants in a variety of research contexts. Researchers are expected to abide by these principles, which stress the importance of responsible and ethical research conduct. Institutional ethical clearance (reference: GW20170206HS) was obtained for this study (Appendix A). Written permission to conduct the study at both primary schools was obtained as well (Appendix B). The following research ethics guidelines in Ethics in Health Research: Principles, Structures and Processes (Department of Health, 2015) were applied in when selecting participants, data collection procedures and data analysis:

2.3.1. Beneficence and non-maleficence

This refers to the ethical obligation of the researcher to ensure maximum benefit with minimal harm or risk when conducting a research study. This principle forbids deliberate infliction of harm on participants. To adhere to the principle of beneficence and non-maleficence the research design should be comprehensive. The researcher was competent in explaining the LCT-2 and DIN test procedures to the participants and in conducting the tests, thereby reducing any anxiety potentially experienced by the participants. As an SLT, the researcher was also trained to assess children without them knowing the assessor beforehand.

2.3.2. Dignity and autonomy

Persons that are capable of deliberation about their own choices must be allowed to practice self-determination. Persons who have a reduced ability for deliberation about their choices must be protected against harm from irresponsible choices. It is required that all persons are treated with respect by recognising that the dignity, well-being and safety of all participants are the primary concern of the research study. As the participants of the research study were all under the age of 18, a parent or legal guardian of the learner decided if the child will voluntary participate, predicated on informed choices. Learners gave assent by colouring in a thumbs-up or thumbs-down image to

indicate their intent (Appendix C). The Grade 1 teachers participated in the study by completing the CHAPPS, and therefore they too were required to decide if they would participate in the study voluntarily.

2.3.3. Informed consent

Before data collection procedures commenced, informed consent was obtained from the research participants (See Appendix C). The informed consent from participants was evidence that their participation in the research study was voluntary and predicated on informed choices. The child assent form was also completed before the researcher conducted the LCT-2 and DIN test (See Appendix C). The Grade 1 teachers all completed an informed consent prior to completing the CHAPPS questionnaires (See Appendix C).

2.3.4. Relevance and value

The proposed contribution of the research should be relevant and responsive to the needs of the people of South Africa. It was crucial that the research addressed the possible contribution to the generation of knowledge and how the results can be translated into products, intervention or services that are likely to improve living standards and well-being of South Africans. The information from the data gathered may assist SLTs and audiologists providing adequate training to teachers of ESL learners in order to improve their auditory skills and listening environment in the classroom and employ strategies to enhance listening comprehension. This will aid in creating optimal conditions for proficient listening with the aim of improving ESL learners' listening comprehension, which may result in improved ESL acquisition, language proficiency and academic progress.

2.3.5. Scientific integrity

In addition to fulfilling a need and being of value to the people of South Africa, the data needed to be reliable and valid to ensure accurate results that address the research aim. A sound research design and methodology certify that the principle of scientific integrity has been considered in the development of the study. The present research study upheld scientific integrity by contributing to the recent research developments by describing

auditory skills and listening comprehension abilities and difficulties of Grade 1 ESL learners.

2.3.6. Non-discrimination

It was vital that the researcher based decisions with regards to recruitment, selection, exclusion and inclusion of participants on thorough scientific and ethical principles. Persons were not unfairly excluded from the study or unfairly targeted for research on the basis of any of the prohibited grounds for discrimination: race, age, sex, sexual orientation, disability, education, religious belief, pregnancy, marital status, ethnic or social origin, conscience, belief or language. When selecting participants, the researcher held strictly to the inclusion and exclusion criteria and did not only select forthcoming or friendly children or teachers.

2.3.7. Privacy and confidentiality

This requires an explanation on how the participants' constitutionally protected rights to privacy and confidentiality were managed and protected in the course of the research. Privacy refers to who has access and personal records about the participant and confidentiality ensures the appropriate measures will be implemented to prevent the disclosure of information that might identify the participant during or after the research study. Researchers need to take measures to insure the privacy and confidentiality of all participants remains intact throughout the research period. The identity of the school and all participants of the research study was well protected as names and identifying information was not included in the final research report. All data with names and identifying information had been stored on a password protected laptop.

2.3.8. Honesty with professional colleagues

Researchers are urged to be honest, clear and unbiased when conveying their findings. The research report and article were neither intentionally misleading nor deceiving. The nature of the findings and procedures followed to obtain the data were not misrepresented or fabricated in any way.

2.3.9. Competence and practices of the researcher

The researcher is registered at the Health Professions Council of South Africa (HPCSA) as an independent SLT practitioner.

2.4. Sampling

2.4.1. Sampling method

A non-random, purposive sampling method was used to select participants. In purposive sampling, a smaller group of key individuals are selected to represent a larger group (Maxwell & Satake, 2006). Certain respondents were deliberately selected to participate in the study based on knowledge of their characteristics. Matching samples is a control procedure designed to restrict the degree to which the participants are allowed to differ, by pairing them according to particular characteristics (Maxwell & Satake, 2006). This ensured there were minimal differences between the EFL and ESL participant groups. The ESL participants were paired with the EFL participants according to their age, gender, mother's level of education and family income. All these variables are associated with child language learning (Owens, 2012).

2.4.2. Sampling size

The parents of 15 Grade 1 learners in both the EFL and ESL groups (30 participants in total), meeting the inclusion criteria were asked to participate in the research study. The participants were critically selected in order to form a homogeneous population according to the inclusion and exclusion criteria stated below. According to Maxwell and Satake (2006), the more alike the population, the smaller the sample size required to adequately represent the characteristic of interest. The sample size was limited as only two schools were used for data collection. Six Grade 1 teachers participated in the study.

2.5. Setting

The study was conducted at two private primary schools in the Tshwane district, Gauteng province of South Africa. Written permission was given by both schools for the researcher to complete data collection on their school grounds. Offices, halls and the store rooms were available to use where training teachers in completing the CHAPPS and formal testing was completed. Private primary

schools were selected as opposed to government primary schools to limit variables amongst participants. The ESL participants and EFL participants were selected from two separate primary schools. The first school majority of the learners were ESL and many of the learners in the second school were EFL. All participants (Grade 1 learners and teachers) were chosen from the selected schools as opposed to being selected from various schools in the Tshwane district. This aided in limiting and controlling the variables in participant's ESL exposure. Private primary schools were selected as opposed to government primary schools as it is assumed that each child will have been exposed to similar SES backgrounds. This further limited the variables amongst participants. During the administration of the formalised tests background noise such as children playing, lawnmowers and traffic was present at both primary schools.

2.6. Participants

2.6.1. Participant selection criteria

Inclusion criteria:

Grade 1 EFL or ESL learners between the ages of six and seven (72-90 months) and of any gender were considered to partake in the research study. Participants had to present with normal hearing (as per pure tone hearing screen) and no middle ear pathology. For the ESL learners their first language had to be one of the Sotho languages (Northern Sotho, Southern Sotho, or Setswana). The Sotho language group has been selected as approximately 40.24% of the South African population speaks Northern Sotho (19.91%), Setswana (15.05%), or Southern Sotho (5.28%) as their first language (Frith, 2011).

Individuals were selected as ESL participants if they met the criteria mentioned above and if their formal time of exposure to the English language was between 12-18 months. The ESL participants were selected if they had normal hearing no history of otitis media. The quality of their informal exposure to English such as speaking English when playing with neighborhood friends or watching English television was also considered. Grade 1 EFL learners between the ages of 72-83 months with normal hearing no history of otitis media were selected as participants. The Grade 1 teachers participating in the study by completing the

CHAPPS questionnaires had to be proficient in English and were required to attend a training session before completing the CHAPPS questionnaires.

Exclusion criteria:

Children with a history of Otitis Media, developmental disabilities, low birth weight and who were born preterm were not selected as participants for the study.

2.6.2. Participant selection procedures

After permission had been obtained from the principals of the two primary schools and ethical clearance was granted, the researcher was able to identify potential participants whose parents or caregivers provided informed consent. The class registers were used to determine potential participants. The parents of the potential participants were contacted and interviewed telephonically to obtain background and additional information for the child such as their medical history and English language exposure. The case history questions asked in the telephonic interview were essential in determining if the potential participant met the strict inclusion criteria for the study. To determine outer and middle ear functioning of each participant an otoscopic and tympanometric examination was performed. All participants passed a pure tone hearing screening conducted on site by an audiologist using the HearScreen™ application according to the “child protocol” of 25dB intensity at 1000, 2000 and 4000Hz (Swanepoel, Myburgh, Howe, Mahomed & Eikelboom, 2014). The participants were purposively selected according to the inclusion and exclusion criteria and placed into research (ESL) group or the control (EFL) group. The teachers participating were the class teachers of the participants selected for the study.

2.6.3. Participant description

The final sample group of participants presented with the following characteristics:

Table 3: Grade 1 participant characteristics (n=30)

Participant Characteristic	Research (ESL) group (n=15)	Control (EFL) group (n=15)
Age in months		
Mean	79.27	79.60
Standard deviation	4.28	2.29
Minimum	74.0	76.0
Maximum	87.0	84.0
Gender		
Female	n=8 (53%)	n=8 (53%)
Male	n=7 (47%)	n=7 (47%)
Home language		
English		n=15 (100%)
Sepedi	n=3 (20%)	
Sesotho	n=5 (33%)	
Setswana	n=7 (47%)	
Additional languages		
None		n=5 (33%)
Afrikaans		n=3 (20%)
English	n=15 (100%)	
Sesotho		n=4 (27%)
Setswana		n=2 (13%)
Other (Yoruba)		n=1 (7%)
Birth order		
First	n=9 (60%)	n=2 (13%)
Second	n=4 (27%)	n=9 (60%)
Third	n=1 (7%)	n=3 (20%)
Fourth	n=1 (7%)	n=1 (7%)
Number of siblings		
None	n=5 (33%)	n=1 (7%)
One	n=6 (40%)	n=7 (47%)
Two	n=3 (20%)	n=5 (33%)
Three	n=1 (7%)	n=2 (13%)
Mother's age in years		
Mean	37.33	40.67
Standard deviation	7.04	3.60
Minimum	26.0	35.0
Maximum	47.0	45.0
Mother's education		
Secondary	n=3 (20%)	
Tertiary	n=12 (80%)	n=15 (100%)
Exposure to English		
Mother	n=15 (100%)	n=15 (100%)
Father	n=8 (53%)	n=13 (87%)
Other (caregivers)	n=6 (40%)	n=5 (33%)
Since birth – 3 years		n=15 (100%)
Grade RR	n=15 (100%)	n=15 (100%)
Grade R	n=15 (100%)	n=15 (100%)
TV	n=15 (100%)	n=15 (100%)
Book reading	n=3 (20%)	n=15 (100%)
Radio	n=2 (13%)	n=2 (13%)
Weekly exposure to TV		
Mean	16.13 hours	9.8 hours
0-4 hours	n=1 (7%)	n=4 (27%)
5-7 hours	n=2 (13%)	n=3 (20%)
8-11 hours		n=2 (13%)
12-14 hours	n=4 (27%)	n=5 (33%)
>14 hours	n=8 (53%)	n=1 (7%)

Participant Characteristic	Research (ESL) group (n=15)	Control (EFL) group (n=15)
Exposure to book reading		
None	n=12 (80%)	
Occasional	n=3 (20%)	
Daily		n=15 (100%)

There were 15 participants in each group. Participants in the research group and control group were similar for age, gender, but differed slightly but not statistically different for their mothers' mean age and mothers' level of education (Table 1). Mothers in the control group were slightly higher educated than the mothers in the research group, but also not statistically significant. With regards to the Grade 1's English exposure, all the participants (n=30) communicated in English with their mothers, watched English speaking programs on TV and were exposed to the use of English in an educational context in both Grade R and Grade RR. Large contrasts between the groups in terms of their shared book reading and TV viewing were noted. The ESL group was greatly exposed to TV, but almost no book reading at home whereas the EFL group was exposed daily to shared book reading and their TV exposure was more controlled at home.

Table 4: Results of t-tests for significant differences in exposure to English between groups

Variables	t-value	p-value
Father	-2.092	0.055
Other Caregivers	0.292	0.774
TV	-1.468	0.164
Weekly Exposure to TV	-2.355	0.034*
Shared Book Reading	-16.837	0.000*
Radio	0.000	1.000

*, statistically significant, p≤0.05

The paired t-test confirmed that there were significant differences in between the two groups' weekly exposure to TV (0.164) and shared book reading (0.000). No other significant differences between the variables in the participants' exposure to English were noted.

Six Grade 1 teachers participated in the study. All the teachers spoke English fluently and completed their degrees at tertiary education institutions. The number of years of teaching experience was evenly distributed between the two

schools and varied from two years (n=1), five to eight years (n=4), and over 30 years of experience (n=1).

2.7. Materials and apparatus

A case history form (Appendix D) was created and utilised during the telephonic interviews with a parent of the potential participants. To determine outer and middle ear functioning of each participant an otoscopic and tympanometric examination was performed. All participants passed a pure tone hearing screening conducted on site by an audiologist using the HearScreen™ smartphone application was utilised for the pure tone hearing screening of each participant (Swanepoel et. al 2014).Three formalised outcome measures were used to assess a combination of auditory skills and listening comprehension abilities of the Grade 1 participants in an educational context. Each tool was considered to have a different level of complexity ranging from linguistically independent to highly linguistically dependent, allowing for various layers of auditory skills and listening comprehension to be assessed.

2.7.1. Digits-in-Noise test

The DIN test is a low linguistically demanding test that uses pre-recorded English digit triplets (e.g. 4-9-3 spoken by a female EFL speaker) in steady-state speech noise (Smits et al., 2013). The DIN test does not require the listener to comprehend auditory information and therefore it assesses auditory skills only. This is an easy task in which learners' speech recognition abilities in noise can be compared to their abilities in listening in a classroom environment. The first triplet is presented to the learner based on their selected comfortable listening intensity and their response is entered into a smartphone application (Potgieter et al., 2016). The next triplet is then presented at a 2dB lower signal-to-noise ratio (SNR) for a correct response or a 2dB higher SNR for an incorrect response to the previous triplet presented (Potgieter et al., 2016). The DIN uses the speech reception threshold of the learner to calculate their average SNR of the triplets presented and these results can be an indication of the learners' speech perception in noise. This test provides preliminary validated normative data for the South African child

population, thus providing objective results (Methula, Visser & Zulu, 2016; Pienaar & Taljaard, 2016).

2.7.2. Children's Auditory Processing Performance Scale

The CHAPPS (Appendix E) is a screening questionnaire that has been used to determine listening difficulties in children at home or in school (Wilson et al., 2011). The six conditions included in the CHAPPS are listening in a quiet environment, listening in noise, listening in ideal conditions as well as listening with multiple inputs, auditory memory and sequencing, and auditory attention span (Dawes, Bishop, Sirimanna, & Bamiou, 2008; Manoel et al., 2010). Both teachers and parents can complete the 36 item questionnaire using a seven-point scale to rate a child's listening behaviour (Wilson et al., 2011). In the present study the CHAPPS was only completed by the participant's teacher given that the setting of this study was in an educational context. The CHAPPS was selected to provide information on the Grade 1 teachers' perceptions of their learners' listening comprehension abilities (listening in noise, in quiet, and ideal conditions as well as listening with multiple inputs) and their auditory memory and attention abilities in the classroom. Listening in noise, quiet, and ideal conditions as well as listening with multiple inputs assessed the participants' listening comprehension abilities. Auditory skills of the participants were assesses in the auditory memory/sequencing and auditory attention span subsections of the CHAPPS. The first three listening conditions are linguistically dependent as teachers are required to score the learners' listening comprehension abilities in terms of how they answer questions and respond to instructions under each listening condition. Listening with multiple inputs was less linguistically demanding as learner's listening comprehension abilities aided with various visual components as opposed to relying on purely auditory information. The auditory memory/sequencing and auditory attention span conditions are considered to have a low less linguistic demand as they assessed the learner's ability to simply store and retain auditory information and selectively focus on the important auditory stimulus while disregarding irrelevant auditory stimuli.

2.7.3. Listening Comprehension Test 2

The LCT-2 (Appendix F) assesses an individual learners' listening comprehension abilities used in the everyday classroom environment rather than through simple repetition and discrimination subtests (Bowers et al., 2006). In a natural classroom environment learners are required to process many incoming speech and non-speech signals, distinguish which signals need immediate attention, organize and understand the input of the signals, and plan appropriate responses, making listening a complex and integrated process. Therefore, the LCT-2 assesses a high level of auditory skills and listening comprehension ability through five highly linguistically dependent subtests. For this study the partipants were tested individually outside of the classroom environment as to limit competing stimuli. In the first and second subtests the learner is required to identify the main idea of the verbally presented information and remember details by answering a question. The third subtest involves reasoning where the learner is required to infer answers from the auditory information provided and the fourth subtest assesses the learner's vocabulary as they are required to define a word in the passage read to them. Subtest five requires the learner to gather the most relevant information from the passage to show understanding of the message.

2.8. Procedures for data collection

Institutional ethical clearance, written permission from both primary schools and informed consents from all six Grade 1 teachers was obtained. The participants were purposively selected according to the inclusion and exclusion criteria and placed into research (ESL) group or the control (EFL) group. The Grade 1 class teachers of the participants were selected as participants. The DIN test and LCT-2 were conducted by the researcher in one individual 35-minute session for each participant. All six Grade 1 teachers were trained in a one-on-one session on how to score the CHAPPS questionnaire they were required to complete for each participant in their classroom. After the training session they were then required to score the CHAPPS for each participant in their everyday classroom environment. All data collected from the three formal assessments were stored on Microsoft Excel Spreadsheets for record keeping and analysis.

2.9. Data analysis

A statistician was consulted and the data were processed and analysed by means of the Statistical Package for the Social Sciences 23 (SPSS 23).

Nonparametric statistical measures were used to analyse the data collected because through the use of histograms and the Shapiro-Wilk test as there was evidence that the data did not have a normal distribution. Descriptive and inferential statistical measures such as the Wilcoxon Signed Rank Test, Paired Samples T-test and Chi Square Test were utilised.

The DIN test was scored in terms of a SNR where according to Methula et al. (2016) the preliminary score for children ages five to seven years is between -7.75dB and -6.31dB. For the CHAPPS scores lower than -1.0 (from slightly more difficult to cannot function at all in the listening context) is considered to be below the normal range and are cause for concern (Smoski et al., 1998). Standard scores were used when analysing the LCT-2 results. Standard scores describe the distance of the raw scores obtained from the mean in terms of the standard deviation (SD) of the distribution of scores (Bowers et al., 2006: 57). A mean of 100 and a SD of 15 were established for the purposes of reporting the results of the LCT-2.

2.10. Reliability and validity

2.10.1. Reliability

Reliability refers to the consistency of results of a specific measuring tool when the specific concept being measured has not changed (Leedy & Ormrod, 2014). In this study two of the tools utilised are published formal outcome measures thereby enhancing the study's reliability.

The DIN test has recently been developed as a smartphone application in South African and normative data for this population has been obtained (Potgieter et al., 2016).

The CHAPPS has been widely used in research to determine listening difficulties. Initially it was developed to identify listening difficulties in individuals

with Auditory Processing disorder, since then the tool has been used on a variety of other populations (Ferguson, Hall, Riley & Moore, 2011; Manoel et al., 2010; Moore, Ferguson, Edmondson-Jones, Ratib & Riley, 2010; Sharma, Purdy & Kelly, 2009).

Although the LCT-2 has yet to be used in a research study the reliability of this formal outcome measure has been established through the use of test-retest and internal consistency methods for all the subtests and the total tests at all age levels (Bowers et al., 2006).

The researcher was successful in matching the two participant groups closely, with no significant differences between them. The only differences were book reading at home and TV viewing, where the ESL group had more exposure to TV and less book reading at home.

2.10.2. Validity

Validity is the extent to which a tool measures what it is intended to measure (Leedy & Ormrod, 2014). The measuring tool must also provide scores where the differences reflect the true differences of the variable that is being measured, and no random or constant mistakes in order to be validated (Bless & Higson-Smith, 2004).

The CHAPPS was selected for the study as it highlights areas of difficulty learners experience when listening in the classroom and should be used to guide intervention in combination with other test findings (Sharma et al., 2009). The LCT-2 employs content validity as it assesses all the important and accepted listening comprehension skills that are developmentally present at ages within the test domain (Bowers et al., 2006). Contrasted groups validity and empirical validity were also established for the LCT-2. The correlations of individual subtests with the overall test as well as the subtest intercorrelations suggest that internal consistency of the LCT-2 are satisfactory because the subtests assess separate listening comprehension functions.

Data were collected by the researcher and teachers, using different tests, but assessing related auditory comprehension abilities. If agreement between the CHAPPS and the LCT-2 could be found, it can be interpreted as enhancing the validity of the results.

Chapter 3

Research Article

The article was submitted to the South African Journal of Childhood Education for review. The article was prepared according to the journal's specification and therefore the formatting differs from that of the dissertation.

Auditory skills and listening comprehension in English second language learners in Grade 1

Abstract

Background

Studies indicate that difficulties English second language (ESL) learners experience in the classroom may not only be attributed to listening comprehension of the language of learning and teaching (LoLT). Limited research is available on the auditory skills and listening comprehension in ESL learners younger than 12 years.

Aim

To determine which areas of auditory skills and listening comprehension Grade 1 ESL learners experience most difficulty with.

Method

A static two-group comparison design was used. Data were collected at two similar independent urban schools from learners between the ages of 72-90 months. The research group were ESL learners (n=15) exposed to English for 12-18 months. The control group were English first language (EFL) learners (n=15). The Digits-in-noise (DIN), Children's Auditory Processing Performance Scale (CHAPPS), and Listening Comprehension Test 2 (LCT-2) were used. Six Grade 1 teachers participated in the study.

Results

Majority of the participants (n=25) passed the DIN however despite having normal hearing some EFL (n=1) and ESL (n=4) participants failed the test. In the overall scores for the CHAPPS and LCT-2, significant differences were found between the two groups (p= 0.024; p=0.001). Strong agreements were found between the ESL participants' test results for the CHAPPS and LCT-2, indicating that they experience significant difficulties with higher linguistically dependent auditory skills and listening comprehension tasks.

Conclusion

ESL participants achieved poorer scores as the listening tasks became more linguistically demanding. Specific layers of auditory skill and listening comprehension difficulties when listening in their LoLT were identified in the ESL learners. Targeted intervention and curriculum support with a speech-language therapist can be given.

Key words

Auditory skills, listening comprehension, Grade 1 learners, English second language, Digits in Noise test, Children's Auditory Processing Performance Scale, Listening Comprehension Test-2

Introduction

In 2007, 65.3% of South African learners were enrolled in schools where the language of learning and teaching (LoLT) is English (Department of Basic Education 2010: 16), yet only 9.6% of the population are English first language (EFL) speakers (South African Census 2011). This indicates that more than 50% of learners in South Africa could be English second language (ESL) learners. Globally it is acknowledged that language proficiency and competence play a key role in academic achievement (Hoff 2006: 55-88; Owens 2012: 16-17) and requires the understanding and use of

classroom discourse which includes the educator's verbal instructions and lessons, as well as written text (van Rooyen & Jordaan 2009: 271-287). Learners are therefore required to develop adequate language skills in speaking, listening, reading, and writing in their LoLT in order to attain cognitive academic language proficiency (CALP) necessary for academic learning. In many low-to-middle income countries such as South Africa, ESL learners have not developed sufficient CALP in their second language (L2) for successful academic learning upon school entry (Taylor & von Fintel 2016: 75-89). Much research exists on the difficulties ESL learners experience when speaking, reading and writing in their L2. However, it is of great concern that the auditory skills and listening abilities of ESL learners has only recently been investigated, even though listening is globally recognized as a key component of language acquisition (Vandergrift & Baker 2015: 390-416) and 50-75% of a learner's time in the classroom is estimated to be spent on listening (Bowers, Huisingh & LoGuidice 2006: 7-9).

Listening and understanding is a complex cognitive process and is perceived as a difficult skill to learn and master (Cole & Flexer, 2015: 229-232). In both natural and structured activities auditory skills are essential to integrating, interpreting and comprehending auditory or linguistic information are interrelated and overlap (Cole & Flexer, 2015: 229-232). According to Cole and Flexer (2015: 229-232) these auditory skills compromise of attending to and detecting auditory information, localizing and disregarding competing stimuli, discriminating, identifying, categorizing and associating the information with other similar items, as well as involving memory and retrieval. Understanding the different components of auditory skills may assist in analising ESL learners' layered difficulties. The process of successful listening comprehension is highly automatized in first language (L1) listeners as little or no conscious attention is required of them (Brunfaut & Revesz, 2015: 141-168). L2 listeners commonly lack harmonious top-down and bottom-up processing (Yeldham 2016: 394-420) and therefore may experience difficulties with their auditory skills

and listening comprehension abilities. Bottom-up processing involves decoding auditory input by segmenting the sounds heard into meaningful unit while top-down processing makes use of context and prior knowledge in order to build a conceptual framework. Vandergrift and Baker (2015: 390-416) emphasize the paucity in research with regards to the variables that contribute to successful L2 listening comprehension.

Several factors thus far have been investigated and proposed to be associated with difficulties in auditory skills and listening comprehension experienced by ESL learners. Environmental factors such as classroom noise and high levels of reverberation have been shown to affect learners' attention, speech perception and concentration, thereby negatively influencing their listening comprehension abilities and educational achievement (Nelson, Kohnert, Sabur & Shaw 2005: 219-229). Studies have also shown that ESL learners experience greater difficulty when perceiving speech in noise and reverberation as opposed to EFL learners (Tabri, Chacra & Pring 2011: 411-422) which is a low linguistically dependent process of auditory skill and listening comprehension.

In addition to the listening environment, listening tasks with higher linguistic dependency contributing to one's listening comprehension have also been investigated. Goh (1999: 14-42) highlighted how vocabulary, speech rate, input text (e.g. lectures, radio broadcasts, face-to-face conversations) and a speaker's accent may be the major sources contributing to listening comprehension difficulties experienced by ESL university students in Singapore. Chang, Wu and Pang (2013: 415-434) stressed how the auditory information presented is an important factor contributing to ESL participants' listening comprehension difficulties. ESL learners indicated that utterances were difficult to understand when they contained unknown words, difficult grammatical structures, unfamiliar topics, abstract concepts, and long sentences (Chang et al. 2013: 415-434). The effectiveness of

listening comprehension of familiar and unfamiliar native accents has been explored and results obtained from the participants (ranging between the ages of 19-35 years) indicated that the familiarity with the speaker's accent benefits the listener under adverse listening conditions such as listening in noise (Adank, Evans, Stuart-Smith & Scotti 2009: 520-529). In a recent South African study, Moodley, Kritzinger and Vinck (2016: 1-15) found that ESL learners (whose L1 is isiNdebele) of isiNdebele L1 teachers performed better, most probably because there are more English loan words in that language than other South African languages. In the same study listening comprehension was also influenced by the age and qualifications of the teacher as well as the teacher's L1.

From the limited research investigating the auditory skills and listening comprehension difficulties of ESL learners, majority of participant groups vary from Grade 4 learners to university students. Very few studies describing the auditory skills or ESL learners and listening comprehension abilities of younger ESL learners are available, specifically with regards to Grade 1 ESL learners. This gap in knowledge of young ESL learners is concerning as this is the age in which learners' CALP should be adequately developed in their LoLT for academic purposes.

Due to the paucity in research regarding the layered components of auditory skills and listening comprehension in ESL learners under the age of 10, difficulties experienced by this population may go undetected or only be identified later in their academic career. Without adequate preventative intervention to facilitate their auditory skills and listening comprehension, these ESL learners' academic progress and achievement may be negatively impacted.

Therefore, the aim of the study was to determine which areas of auditory skill and listening comprehension Grade 1 ESL learners experience most difficulty with.

Method

Study design

The study employed a static two-group comparison design to compare auditory skills and listening comprehension abilities of Grade 1 ESL learners to Grade 1 EFL learners. Additionally, a quantitative, cross-sectional research design was utilised as formalized tests were used once-off to collect data from this small sample.

Setting

The study was conducted at two independent primary schools in an urban setting of the Tshwane district, Gauteng province of South Africa where the LoLT is English. Independent primary schools were selected as opposed to public primary schools as to limit variables amongst participants, such as family income. The parents of the participants were all able to afford private education for their children, indicating a similarity in socio-economic status between the participants in both schools.

Study population

Two sets of participants were utilised in this study, namely Grade 1 learners and their teachers. A non-random, purposive sampling method was used when selecting participants for the ESL (n=15) and EFL group (n=15) according to the following inclusion criteria: Normal hearing Grade 1 learners between the ages of 72-83 months with no history of otitis media. ESL learners whose first language is Sepedi, Sesotho, or Setswana and who have had 12-18 months of formal exposure to English were selected. The study employed matching samples control procedures where the ESL participants were matched with the EFL participants according to age and gender. Six Grade 1 teachers participated in the study. All the teachers spoke English fluently and completed their degrees at tertiary education institutions. The number of years of teaching experience was evenly distributed between the two schools and

varied from two years (n=1), five to eight years (n=4), and over 30 years of experience (n=1). The characteristics of the Grade 1 participants are described in Table 1.

TABLE 5: Grade 1 participant characteristics (n=30)

Participant Characteristic	Research (ESL) group (n=15)	Control (EFL) group (n=15)
Age in months		
Mean	79.27	79.60
Standard deviation	4.28	2.29
Minimum	74.0	76.0
Maximum	87.0	84.0
Gender		
Female	n=8 (53%)	n=8 (53%)
Male	n=7 (47%)	n=7 (47%)
Home language		
English		n=15 (100%)
Sepedi	n=3 (20%)	
Sesotho	n=5 (33%)	
Setswana	n=7 (47%)	
Additional languages		
None		n=5 (33%)
Afrikaans		n=3 (20%)
English	n=15 (100%)	
Sesotho		n=4 (27%)
Setswana		n=2 (13%)
Other		n=1 (7%)
Mother's age in years		
Mean	37.33	40.67
Standard deviation	7.04	3.60
Minimum	26.0	35.0
Maximum	47.0	45.0
Mother's education		
Secondary	n=3 (20%)	
Tertiary	n=12 (80%)	n=15 (100%)
Exposure to English		
Mother	n=15 (100%)	n=15 (100%)
Father	n=8 (53%)	n=13 (87%)
Other	n=6 (40%)	n=5 (33%)
Since birth – 3 years		n=15 (100%)
Grade RR	n=15 (100%)	n=15 (100%)
Grade R	n=15 (100%)	n=15 (100%)
Frequent exposure to TV	n=12 (80%)	n=8 (53%)
Frequent exposure to book reading	n=3 (20%)	n=15 (100%)
Radio	n=2 (13%)	n=2 (13%)
Weekly exposure to TV at home		
Mean	16.13 hours	9.8 hours
0-11 hours	n=3(20%)	n=9(60%)
>12 hours	n=12 (80%)	n=6 (40%)

Participant Characteristic	Research (ESL) group (n=15)	Control (EFL) group (n=15)
Exposure to book reading at home		
None	n=12 (80%)	
Occasional	n=3 (20%)	
Daily		n=15 (100%)

There were 15 Grade 1 participants in each group. The Sotho language group was selected as the research groups' L1 as approximately 40% of the South African population speak Northern Sotho (20%), Setswana (15%), or Southern Sotho (5%) as their first language (Frith, 2011). Participants in the research and control groups were similar in age and gender, and differed slightly for their mothers' mean age and mothers' level of education (Table 1). Mothers in the control group were slightly higher educated and older than the mothers in the research group, but no statistically significant difference was found. With regards to the Grade 1's English exposure, all the participants (n=30) communicated in English with their mothers, watched English speaking programs on TV and were exposed to the use of English in an educational context in both Grade R and Grade RR. Large contrasts between the groups in terms of their shared book reading and TV viewing were noted. The ESL group was greatly exposed to TV, but almost no book reading at home whereas the EFL group was exposed daily to shared book reading and their TV exposure was more controlled at home. The paired t-test confirmed that there were significant differences between the two groups' weekly exposure to TV (0.164) and shared book reading (0.000). No other significant differences between the variables in participant's exposure to English were noted.

Material and apparatus

Three formalised outcome measures were used to assess the auditory skills and listening comprehension abilities of the Grade 1 participants in an educational context. Each tool was considered to have a different level of complexity ranging from linguistically independent to highly linguistically dependent, allowing for

various layered levels of auditory skills and listening comprehension to be assessed comprehensively. The Digits-in-noise (DIN) test is a low linguistically demanding listening task, as it uses pre-recorded English digit triplets (e.g. 4-9-3 spoken by a female EFL speaker) in steady-state speech noise to assesses an individual's ability to perceive speech in noise (Smits, Goverts & Festen 2013: 1693-1706). The first triplet is presented to the learner based on their selected comfortable listening intensity and their response is entered into a smartphone application (Potgieter, Swanepoel, Myburgh, Hopper & Smits 2016: 405-411). The next triplet is then presented at a 2dB lower signal-to-noise ratio (SNR) for a correct response or a 2dB higher SNR for an incorrect response to the previous triplet presented (Potgieter et al. 2016: 405-411). The DIN test uses the speech reception threshold of the learner to calculate their average SNR of the triplets presented and these results can be an indication of the learners' speech perception in noise. In addition to its low linguistic demand, the DIN test has validated normative data for the South African population (Potgieter et al. 2016: 405-411).

The Children's Auditory Processing Performance Scale [CHAPPS] (Smoski, Brunt & Tannahill, 1998) was originally developed for children with hearing loss, but can be used for children with normal hearing. It is a 36-item questionnaire using a seven-point scale (from cannot function at all in the context observed, to showing less difficulty) both teachers and parents can complete to rate a child's listening behaviour (Wilson et al. 2011: 278-291). It is a screening questionnaire that has been used to determine listening difficulties in children at home or in school under six different listening conditions (Wilson et al. 2011: 278-291). Given that the setting of this study was in an educational context, only teachers were required to complete the CHAPPS questionnaire for each participant. The CHAPPS was selected to provide information on the learners' listening comprehension abilities when listening in noise, in quiet, and ideal conditions as well as listening with multiple inputs, such as watching the speaker's face or being provided with illustrations.

Their auditory skills such as their auditory memory and attention abilities in the classroom were also assessed. The first three listening conditions (noise, quiet, ideal) are linguistically dependent as teachers are required to score the learners listening comprehension abilities in terms of how they answer questions and respond to instructions under each listening condition. Listening with multiple inputs was less linguistically demanding as learner's listening comprehension abilities aided with various visual components as opposed to relying on purely auditory information. The auditory memory/sequencing and auditory attention span conditions are considered to have a low less linguistic demand as they assessed the learner's ability to simply store and retain auditory information and selectively focus on the important auditory stimulus while disregarding irrelevant auditory stimuli.

The Listening Comprehension Test 2 (LCT-2) assesses learners' listening comprehension abilities used in the everyday classroom environment rather than through simple repetition and discrimination subtests (Bowers et al. 2006: 9). In a natural classroom environment learners are required to process many incoming speech and non-speech signals, distinguish which signals need immediate attention, organize and understand the input of the signals, and plan appropriate responses, making listening a complex and integrated process. Therefore the LCT-2 assesses a high level of listening comprehension ability through five highly linguistically dependent subtests. In the first and second subtests the learner is required to identify the main idea of the verbally presented information and remember details by answering a question. The third subtest involves reasoning where the learner is required to infer answers from the auditory information provided and the fourth subtest assesses the learner's vocabulary as they are required to define a word in the passage read to them. Subtest five requires the learner to gather the most relevant information from the passage to show understanding of the message.

Procedures

Written permission to conduct the study at both primary schools was obtained as well as the informed consent from all six Grade 1 teachers. The class registers were used to determine potential participants. The parents of the potential participants were contacted and interviewed telephonically to obtain background and additional information of the child such as their medical history and English language exposure. Parents of all the participants provided informed consent for their child to partake in the study. To determine outer and middle ear functioning of each participant an otoscopic and tympanometric examination was performed. All participants passed a pure tone hearing screening conducted on site by an audiologist using the HearScreen™ smartphone application according to the "child protocol" of 25dB intensity at 1000, 2000 and 4000Hz (Swanepoel et al. 2014, 841–849). The DIN test and LCT-2 were conducted by the researcher in one individual 35 minute session for each participant. All six Grade 1 teachers were trained in a one-on-one session on how to complete the CHAPPS questionnaire for each participant in their classroom. They were then required to complete the CHAPPS for each participant.

Data analysis

The data were processed and analysed by using the Statistical Package for the Social Sciences 23 (SPSS 23). Nonparametric statistical measures were used to analyse the data collected because through the use of histograms and the Shapiro-Wilk test there was evidence that the data did not have a normal distribution. Descriptive and inferential statistical measures such as the Wilcoxon Signed Rank Test, Paired Samples T-test and Chi Square Test were utilised. The DIN test was scored in terms of a SNR where according to Methula, Visser and Zulu (2016) the preliminary score for children ages five to seven years is between -7.75dB and -6.31dB. For the CHAPPS scores lower than -1.0 (from slightly more difficult to cannot function at all in the listening context) is considered to be below the normal range and are cause for

concern (Smoski et al., 1998). Standard scores were used when analysing the LCT-2 results. Standard scores describe the distance of the raw scores obtained from the mean in terms of the standard deviation (SD) of the distribution of scores (Bowers et al. 2006: 57). A mean of 100 and a SD of 15 were established for the purposes of reporting the results of the LCT-2.

Ethical considerations

Institutional ethical clearance (reference: GW20170206HS) was obtained.

Results

Descriptive statistics were used to obtain the mean, SD, median and inter-quartile range for the three formal assessment tests completed by the ESL and EFL groups. These results as well as the differences between the assessment outcomes for the two groups as determined by the Wilcoxon Signed Ranks Test are shown in Table 2 below. The results are given in order of listening difficulty, from the DIN test which is less linguistically dependent to higher linguistically dependency as assessed by the CHAPPS and LCT-2.

TABLE 2: Overall outcome of the Digits-In-Noise test, Children's Auditory Processing Performance Scale and Listening Comprehension Test-2

	Research (ESL) Group			Control (EFL) Group			
Assessment Tests	**Mean**	**SD**	**Median (IQR)**	**Mean**	**SD**	**Median (IQR)**	**p-value**
DIN	-7.54	2.41	-7.2 (-8.8 – -6)	-7.89	1.47	-8.4 (-8.8 – -6.8)	0.378
CHAPPS: Total	-1.3	0.90	-1	-0.33	0.88	0	0.024*
CHAPPS: Noise	-1.87	1.11	-1.5	-0.83	1.13	-0.5	0.021*
CHAPPS: Quiet	-1.5	1.1	-1	-0.37	0.99	0	0.013*
CHAPPS: Ideal	-0.63	1.23	-0.5	0.37	0.81	1	0.015*
CHAPPS: Multiple inputs	-1.03	0.72	-1	-0.2	0.86	0	0.012*

	Research (ESL) Group	Control (EFL) Group			Research (ESL) Group	Control (EFL) Group	
Assessment Tests	**Mean**	**SD**	**Median (IQR)**	Assessment Tests	**Mean**	**SD**	**Median (IQR)**
CHAPPS: Auditory memory and sequencing	-1.33	1.03	-1.5	-0.43	1	-0.5	0.038*
CHAPPS: Auditory attention span	-1.07	0.90	-1	-0.33	0.86	0	0.053
LCT-2: Overall	87.13	10.47	85 (79 – 98)	111.2	8.63	112 (104 – 119)	0.001*
LCT-2: Subtest A	88.33	12.20	90 (80 – 100)	106.33	9.54	110 (95 – 115)	0.001*
LCT-2: Subtest B	87.13	12.21	87 (75 – 100)	111.8	10.19	114 (105 – 119)	0.001*
LCT-2: Subtest C	91.8	7.61	95 (85 – 98)	108.27	9.79	107 (102 – 114)	0.001*
LCT-2: Subtest D	90.53	7.57	87 (85 – 97)	115.8	9.03	115 (110 – 122)	0.001*
LCT-2: Subtest E	92.4	6.87	90 (85 – 98)	106	12.42	110 (98 – 117)	0.003*

*, statistically significant, p≤0.05; SD, standard deviation; IQR, interquartile range

Figure 1 illustrates the number of participants in the ESL and EFL group who passed or failed the DIN test.

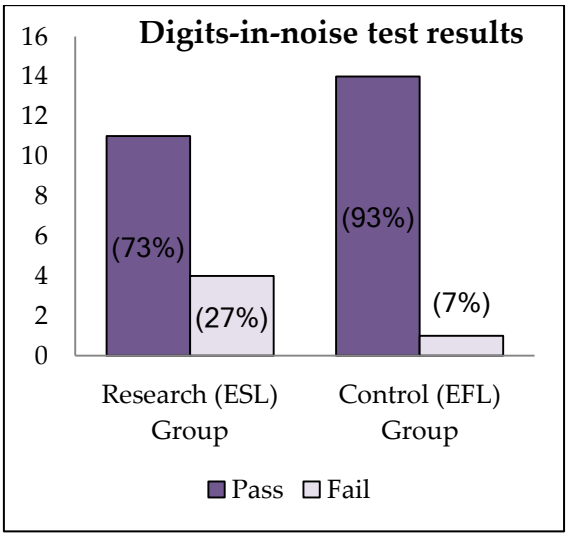

FIGURE 1: The number of participants in the ESL and EFL groups who passed or failed the DIN test according to their SNR

Of the EFL group 93% (n=14) passed the DIN test while 73% (n=11) of the ESL group passed the test (Figure 1). No significant difference was found between the two groups as seen in Table 2 (p=0.387). Although only a few, there were participants from both groups who showed auditory skill difficulties despite having normal hearing.

Figure 2 depicts the number of participants in the ESL and EFL group who passed or failed the CHAPPS questionnaire as well as its various subsections.

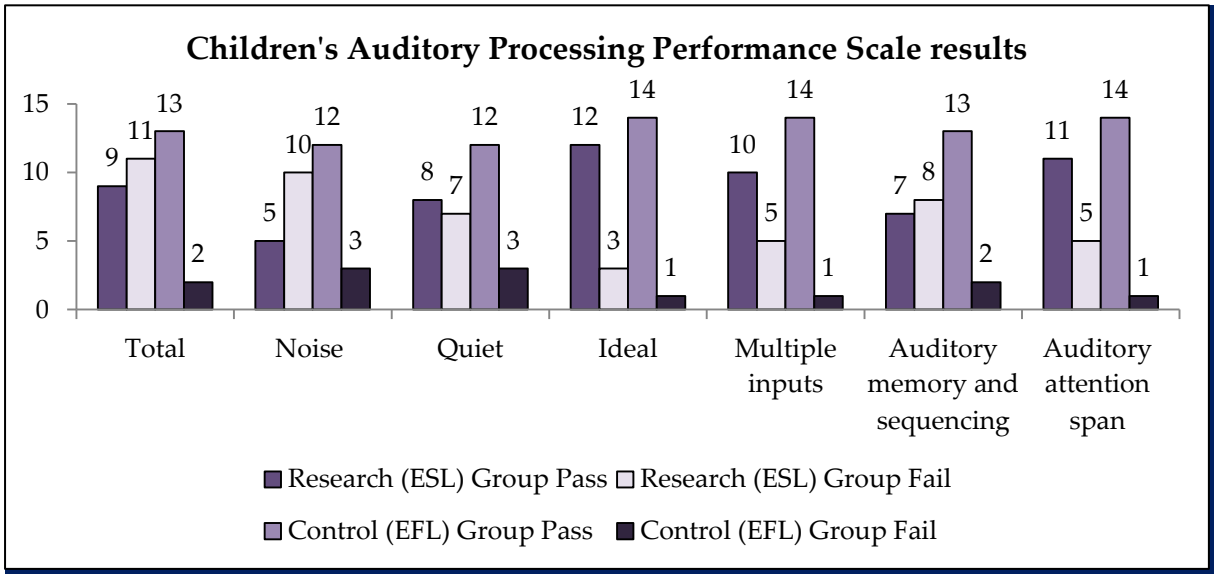

FIGURE 2: The number of participants in the ESL and EFL groups who passed or failed the various sections of the CHAPPS questionnaire

It is evident from the CHAPPS results (Table 2 and Figure 2) that the ESL participants showed poorer overall scores for each subsection of the CHAPPS, except for auditory attention span where scores showed no significant difference compared to the EFL participants. Auditory attention span is an auditory skill and similar results across the groups were in agreement with the DIN test results, showing that these ESL participants experienced few difficulties with this particular lower level auditory skill. Majority of the ESL participants' ability to listen in noise were not as superior as their EFL peers and significant differences were noted (Table 2) between the ESL and EFL participant groups' listening comprehension under this

condition (p=0.021). The ESL participants obtained higher scores for their listening comprehension abilities in quiet and ideal conditions, however significant differences between their scores and the EFL participants' scores (quiet, p=0.013; ideal, p=0.015) were still found (Table 2). Although a significant difference (p=0.012) was found between the groups' scores, the ESL participants' listening comprehension abilities were better when listening with multiple inputs such as visual aids (Figure 2) compared to their other scores in the CHAPPS. Many of the ESL participants were reported to have difficulty with auditory memory and sequencing tasks in the classroom (Figure 2). A significant difference between the ESL and EFL participants' auditory memory and sequencing scores (p=0.038) was found (Table 2). No significant difference (p=0.053) was found between the ESL and EFL participants where their auditory attention span was scored and majority of the ESL participants performed well in this subtest. Majority of the ESL participants (67%) experienced the most difficulty when listening in noise and with their auditory memory and sequencing (47%). Apart from listening comprehension difficulties identified in the ESL group, they also showed significant differences with certain higher level auditory skills such as auditory memory.

Figure 3 shows the standard scores achieved by the ESL and EFL participants overall for the LCT-2 as well as for the five subtests.

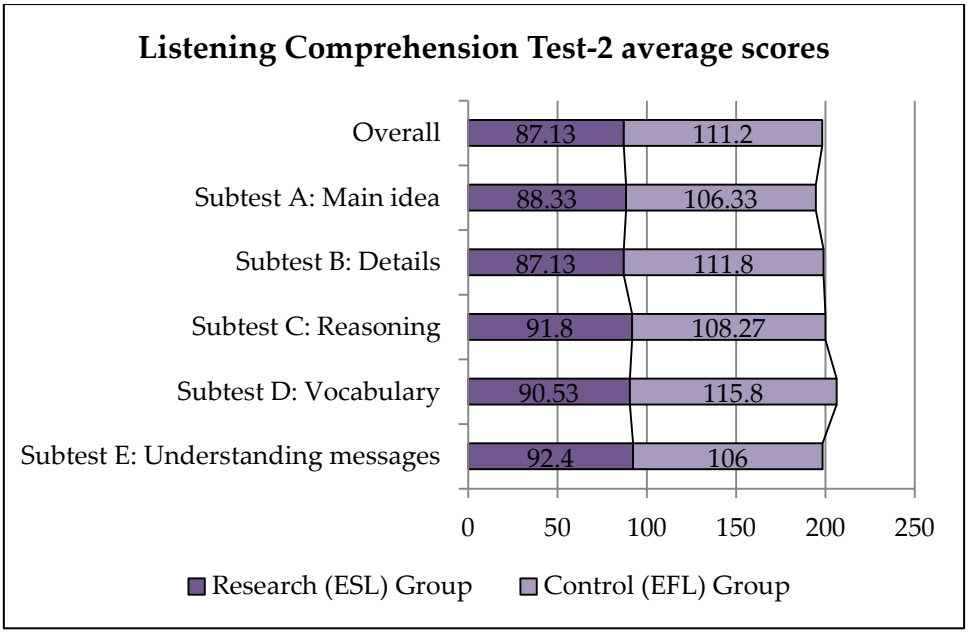

FIGURE 3: The average standard scores obtained by the participants in both groups for the various LCT-2 subtests were a mean of 100 and SD of 15 were established

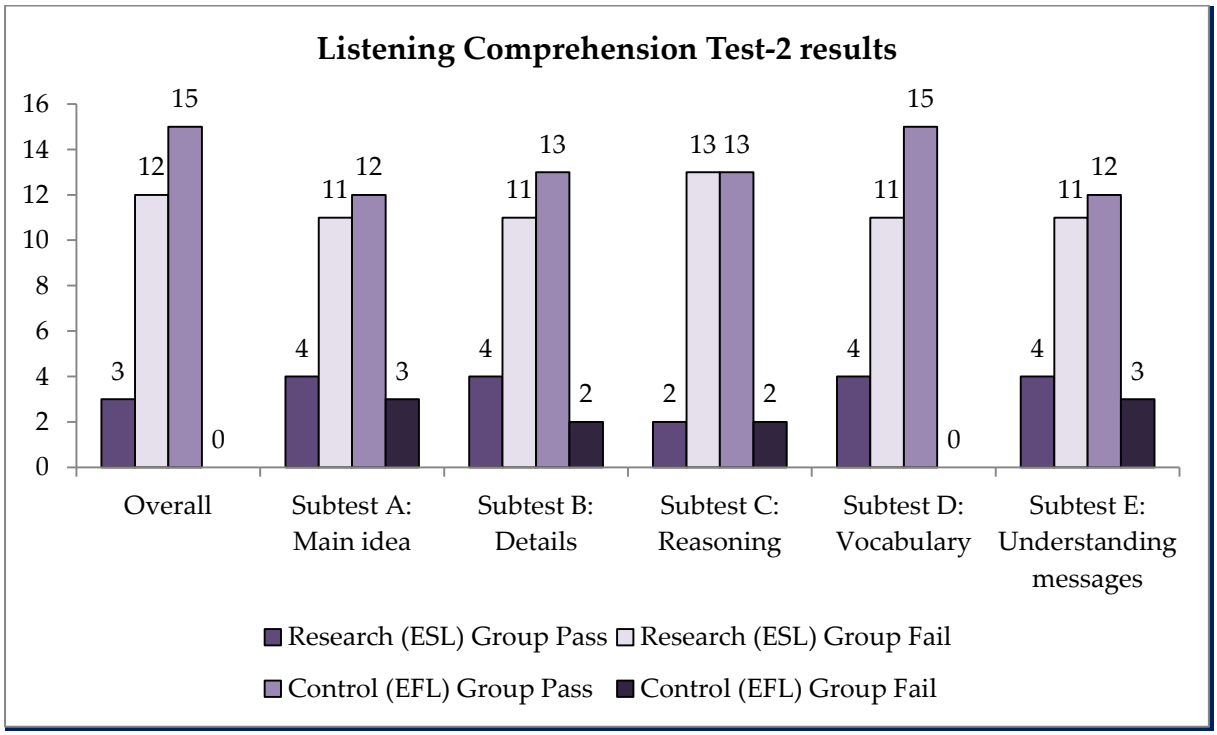

Figure 4: The number of participants in the ESL and EFL groups who passed or failed the various sections of the LCT-2

The ESL participants performed significantly poorer overall and in each subtest of the LCT-2 (Figure 3 and 4) in comparison with the EFL group. Significant differences were also found between the scores of the two participant groups in all of the LCT-2 subtests and overall score (Table 2). The overall LCT-2 score of 87.13 (Figure 3) obtained by the ESL learners and all the subtests indicate that they scored one SD

below the mean of the normative sample. This result is depicted in Figure 4 where majority of the ESL participants did not display adequate listening comprehension skills according to the LCT-2. The ESL participants' scores for all subtests of the LCT-2 were one SD below the norm (Figure 3). Significant differences of p=0.001 between participant groups scores for the main idea, details, reasoning and vocabulary were found (Table 2). A significant difference of p=0.003 was found between the groups for understanding messages in the LCT-2. Over 80% of the EFL participants passed each LCT-2 subtest (Figure 4), and their standard scores (Figure 3) indicate that they were within one SD of the peer group for every subtest.

TABLE 3: Results of the Spearman Rank Correlation to determine the strength of association between the DIN, CHAPPS and LCT-2

Tests		Values	DIN	CHAPPS	LCT-2
Research (ESL) Group	**DIN**	**r_s**	1.000	-0.459	-0.340
		p-value	.	0.085	0.215
	CHAPPS	**r_s**	-0.459	1.000	0.701
		p-value	0.085	.	0.004**
	LCT-2	**r_s**	-0.340	0.701	1.000
		p-value	0.215	0.004**	.
Control (EFL) Group	**DIN**	**r_s**	1.000	-0.221	-0.529
		p-value	.	0.428	0.043**
	CHAPPS	**r_s**	-0.221	1.000	0.113
		p-value	0.428	.	0.688
	LCT-2	**r_s**	-0.529	0.113	1.000
		p-value	0.043**	0.688	

**, correlation is significant, $p \leq 0.05$; r_s, Spearman's correlation coefficient

The strength of association between the three formal outcome measures selected for this study was determined through the use of Spearman's Rank Correlation (Table 3). A strong correlation ($r_s = 0.701$, $p = 0.004$) was found between the LCT-2 and CHAPPS questionnaire in the ESL group (Table 3). A correlation ($r_s = -0.529$, $p = 0.043$) was also established between the LCT-2 and DIN in the EFL group (Table 3). The strong agreements found between the ESL participants' test results for the CHAPPS and LCT-2, indicate that they experience significant difficulties with higher linguistically dependent auditory skill and listening comprehension tasks.

Discussion

Listening is a complex skill due to the many cognitive and linguistic processes involved which makes it challenging to assess an individual's listening abilities with one formal assessment tool. This study aimed to investigate the layered auditory skills and listening comprehension abilities of Grade 1 ESL learners by means of the DIN test, CHAPPS and LCT-2. Their results were compared with a matched EFL group. In the ESL participant group significant correlations were found between the LCT-2 and CHAPPS, highlighting the validity of these assessment tests in this study. The strong agreement between the CHAPPS and LCT-2 scores suggest that these ESL learners experienced greater difficulty as the tasks in the formal outcome measures became more linguistically demanding.

Only minor differences were observed between the two participant groups' DIN test results, however, the ESL participants performed poorer than the EFL participants. The results are in agreement with Kaandorp et al. (2015:157-167) who found that the non-nativeness of DIN test-takers had only minor effects on their ability to recognise digit-triplets in noise. Overall the DIN test was a low linguistically demanding assessment that majority of the ESL participants were able to pass. Despite having normal hearing, not all participants in both groups passed the DIN test. Teachers should be aware of their learners' ability to perceive speech in noise as it is an auditory skill necessary for listening comprehension.

Another auditory skill required for successful listening comprehension was assessed in the auditory attention span subsection of the CHAPPS. Similar to the DIN test results, majority of the ESL participants were able to pass this low linguistically demanding subsection. The evaluation of the ESL participants' auditory attention span provided information on their ability to attend to auditory information in the classroom but not their comprehension of the information provided. As no

significant difference were found between the ESL and EFL participants' performance with their DIN test and auditory attention span scores, it is suggested that the basic process of perceiving and attending to auditory information was not a contributing factor to the listening comprehension difficulties of the ESL participants. Many of the ESL participants demonstrated adequate listening comprehension abilities when the auditory information was supplemented with visual aids. When listening with multiple inputs such as the teacher's facial expressions, written text or pictures, the ESL participants were able to successfully understand the auditory information provided. This listening comprehension task was more linguistically demanding than simply perceiving speech or attending to auditory information but not as linguistically demanding as understanding purely auditory information with no visual aid. The results showed that when only auditory information was provided (a highly linguistically demanding task) the ESL participants' listening comprehension of abilities were better when listening in a quiet environment compared to listening in noise. These findings suggest that the higher level auditory skills and listening comprehension abilities of the ESL participants in this study are not sufficiently developed to understand purely auditory information as presented to them in the classroom as they rely on visual cues in attempt to make sense of what they have heard. The results also suggest that reducing classroom noise may assist ESL learners with listening comprehension. The ESL participants' demonstrated the most difficulty with the higher linguistically demanding tasks of the CHAPPS namely when listening in noise and their auditory memory abilities. The trends in results obtained from the CHAPPS indicate that these ESL participants' listening comprehension abilities were sufficient for very low linguistically dependent tasks but they have not yet developed adequate skills for high linguistically dependent tasks that are needed for Grade 1.

Unlike the CHAPPS, all subtests of the LCT-2 are highly linguistically dependent as the information presented was purely auditory and no visual aids were available to

assist with the participants' listening comprehension and interpretation. The five subtests of the LCT-2 are where the ESL participants showed the poorest results in the study and the differences in their scores compared to the EFL participants were the most significant. The results of the LCT-2 are in accordance with the conclusion drawn from the CHAPPS scores, demonstrating how the ESL participants do not have adequate listening comprehension skills for high linguistically dependent tasks. The inability of the ESL participants to make inferences of what was said based on their linguistic knowledge and contextual knowledge may offer an explanation for their poor scores in the LCT-2. Vandergrift and Goh (2012: 30) list the core skills for successful listening comprehension as listening for details, listening for global understanding, listening for main ideas, making inferences, predicting and listening selectively. The ESL participants' results of the LCT-2 are of great concern as learners are expected to have adequate listening comprehension skills in LoLT upon entry into Grade 1 in order to develop their CALP. They must be supported to develop adequate listening comprehension abilities in their LoLT in order to close the gap between them and EFL learners as highly linguistically dependent formal instruction is used from Grade 1. As the specific processes of auditory skills and listening comprehension in which these ESL learners experience difficulty have been identified and targeted intervention and curriculum support can be given.

Learners' auditory skills and listening comprehension abilities have been associated with language competence and literacy development (Wildschut, Moodley & Aronstam 2016: 1-9; Wium & Louw 2015:19-41) which are necessary for academic success. Further studies should explore if relationships exist between Grade 1 ESL and EFL learners' listening comprehension abilities and various areas of their academic performance.

Conclusion

The varying complexities and features of the three outcome measures used in this study provided the opportunity to describe layered processes of the ESL participants' auditory skills and listening comprehension abilities. From the results it was evident that the ESL participants performed poorer in all three tests compared to their EFL peers. A direct relationship was observed with the results obtained by the ESL participants showing that as the tasks from the three outcome measures became more linguistically dependent, the lower their scores were. This relationship suggested that the auditory skills and listening comprehension difficulties experienced were not strongly related to environmental interferences but rather to intrinsic factors such as their English language proficiency.

This study provides concerning information about how these learners' auditory skills and English listening comprehension abilities were not adequately developed upon entry into Grade 1 which may have negative effects on their acquisition of CALP. The recent report on the Annual National Assessment of 2014 (Department of Basic Education, 2014) stated that only 1.5 - 17% of learners in Grades 3, 6 and 9 had reached an 'achieved level of performance' in language and mathematics indicating that poor CALP in learners is very common in South Africa. A large number of South African learners make a sudden unsupported transition to English in Grade 1 (Kathard et al. 2011: 59-71). Although the study draws attention to the lack of CALP in a single independent school and cannot be generalized, poorly developed listening comprehension skills for English in Grade 1 learners are widespread. The results isolated the areas of difficulty in auditory skills and listening comprehension these ESL participants experienced. These specific areas of difficulty may be indirectly addressed by speech-language therapists through teachers and parents where education and curriculum support provided by speech-language therapists will aid in developing ESL learners' CALP in English. The focus should then not

only be on intervention for listening comprehension difficulties but rather on prevention. Early identification of learners at risk of auditory skills and listening comprehension difficulties should occur prior to their Grade 1 academic year. Since there was limited book reading reported at home in the ESL group, parent guidance on developing their child's CALP in the LoLT by means of shared book reading and the oral tradition of storytelling may be an important component of prevention.

Further studies to determine the listening abilities of Grade 1 ESL learners should be conducted where a large representative population sample is employed in the study design.

Acknowledgements

The authors would like to thank the children, principals, parents of the child participants as well as the teachers who participated in the study.

Competing interests

The authors declare that they have no financial or personal competing interests that may have inappropriately influenced them in writing this article.

Authors' contributions

K.A. was the primary author of the manuscript and collected and analysed the data. A.K. and L.P. assisted with the design of the study and provided continuous input and internal review of the manuscript.

References

Adank, P., Evans, B., Stuart-Smith, J. & Scotti, S., 2009, 'Comprehension of familiar and unfamiliar native accents under adverse listening conditions', *Journal of Experimental Psychology: Human Perception and Performance,* 35(2), 520-529.

Bowers, L., Huisingh, R. & LoGuidice, C., 2006, *The Listening Comprehension Test 2*, PRO-ED, Inc., Texas, USA.

Brunfaut, T. & Revesz, A., 2015, 'The role of task and listener characteristics in second language listening', *TESOL Quarterly*, 49(1), 141-168. http://dx.doi.org/10.1002/tesq.168

Cole, E. & Flexer, C., 2015, *Children with hearing loss: Developing listening and talking, birth to six,* Plural Publishing, Inc, California, USA.

Chang, A., Wu, B. & Pang, J., 2013, 'Second language listening difficulties perceived by low-level learners', *Perceptual and Motor Skills: Learning and Memory,* 16, 415-434. http://dx.doi.org/10.2466/22.23.PMS.116.2.415-434

Department of Basic Education (DBE), 2010, *The status of the language of learning and teaching (LoLT) in South African public schools: A quantitative overview,* Department of Basic Education, Pretoria.

Department of Basic Education (DBE), 2014, *Report on Annual National Assessment of 2014*, Department of Basic Education, Pretoria.

Frith, A., 2011, *City of Tshwane: Metropolitan Municipality 799 from Census 2011*, viewed February 2017, from Census 2011: https://census2011.adrianfrith.com/place/799

Goh, C., 1999, 'How much do learners know about the factors that influence their listening comprehension?', *Hong Kong Journal of Applied Linguistics,* 4(1), 14-42.

Hoff, E., 2006, 'How social contexts support and shape language development', *Developmental Review,* 26, 55-88. http://dx.doi.org/10.1016/j.dr.2005.11.002

Kaandorp, M., De Groot, A., Festen, J., Smits, C. & Goverts, S., 2015, 'The influence of lexical-access ability and vocabulary knowledge on measures of speech recognition in noise', *International Journal of Audiology,* 55, 157–167. http://dx.doi.org/10.3109/14992027.2015.1104735

Kathard, H., Ramma, L., Pascoe, M., Jordaan, H., Moonsamy, S. et al., 2011, 'How can speech-language therapists and audiologists enhance language and literacy outcomes in South Africa ? (And why we urgently need to)', *South*

African Journal of Communication Disorders, 58(2), 59-71. http://dx.doi.org/ 10.4102/sajcd.v58i2.27

Methula, N., Visser, M., & Zulu, S., 2016, 'Digits-in-noise test in children - age norms for English home and first additional language speakers', South Africa.

Moodley, P., Kritzinger, A. & Vinck, B., 2016, 'Variables associated with Grade R English additional language acquisition in multilingual rural Mpumalanga schools', *South African Journal of Education,* 36(3), 1-15. http://dx.doi.org/10.15700/saje.v36n3a1253

Nelson, P., Kohnert, K., Sabur, S. & Shaw, D., 2005, 'Classroom noise and children learning through a second language: Double jeopardy?', *Language, Speech, and Hearing Services in Schools,* 36, 219-229. http://dx.doi.org/ 10.1044/0161-1461(2005/022)

Owens, R.E., 2012, *Language development: An introduction,* 8th edn., Pearson Education Inc., Boston, USA.

Potgieter, J., Swanepoel, D., Myburgh, H., Hopper, T. & Smits, C., 2016, 'Development and validation of a smartphone-based digits-in-noise hearing test in South African English', *International Journal of Audiology,* 55(7), 405–411. http://dx.doi.org/ 10.3109/14992027.2016.1172269

Smits, C., Goverts, T. & Festen, J., 2013, 'The digits-in-noise test: Assessing auditory speech recognition abilities in noise', *The Journal of the Acoustical Society of America,* 133(3), 1693-1706. http://dx.doi.org/

Smoski,W. J., Brunt, M. A. & Tannahill, J. C., 1998, *Children's Auditory Performance Scale*, The Educational Audiology Association, Florida, USA.

Statistics South Africa, 2011, '*Census 2011: Statistical release*', Statistics South Africa, Pretoria.

Swanepoel, D., Myburgh, Howe, D., Mahomed, F. & Eikelboom, R., 2014, 'Smartphone hearing screening with integrated quality control and data management', *International Journal of Audiology,* 53(12), 841–849. http://dx.doi.org/ 10.3109/14992027.2014.920965

Tabri, D., Chacra, K. & Pring, T., 2011, 'Speech perception in noise by monolingual, bilingual and trilingual listeners', *International Journal of Language & Communication Disorders,* 46(4), 411-422. http://dx.doi.org/10.3109/13682822.2010.519372

Taylor, S. & Von Fintel, M., 2016, 'Estimating the impact of language of instruction in South African primary schools: A fixed effects approach', *Economics of Education Review,* 50, 75- 89. http://dx.doi.org/10.1016/j.econedurev.2016.01.003

Van Rooyen, D. & Jordaan, H., 2009, 'An aspect of language for academic purposes in secondary education: Complex sentence comprehension by learners in an integrated Gauteng school', *South African Journal of Education,* 29, 271-287.

Vandergrift, L. & Baker, S., 2015, 'Learner variables in second language listening comprehension: An exploratory path analysis', *Language Learning,* 65(2), 390-416. http://dx.doi.org/ 10.1111/lang.12105

Vandergrift, L. & Goh, C., 2012, *Teaching and learning second language listening: Metacognition in action,* Routledge, New York, USA.

Wildschut, Z., Moodley, T. & Aronstam, S., 2016, 'The baseline assessment of Grade 1 learners' literacy skills in a socio-economically disadvantaged school setting', *South African Journal of Childhood Education,* 6(1), 1-9. http://dx.doi.org/10.4102/sajce.v6i1.340

Wium, A. & Louw, B., 2015, 'The South African national school curriculum: Implications for collaboration between teachers and speech-language therapists working in schools', *South African Journal of Childhood Education,* 5(1). http://dx.doi.org/10.4102/sajce.v5i1.348

Wilson, W., Jackson, A., Pender, A., Rose, C., Wilson, J., Heine, C. & Khan, A., 2011, 'The CHAPS, SIFTER, and TAPS-R as predictors of (C)AP and (C)APD', *Journal of Speech, Language, and Hearing Research,* 54, 278-291.

Yeldham, M., 2016, 'Second language listening instruction: Comparing a strategies-based approach with an interactive, strategies/bottom-up skills approach', *TESOL Quarterly,* 50(2), 394-420. http://dx.doi.org/ 10.1002/tesq.233

Chapter 4

Discussion and conclusion

The aim of this chapter is to provide a summary of the results, discuss the contributions and implications of the study and end with a conclusion. A critical evaluation of the strengths and limitations of the study as well as recommendations for the direction of future research are discussed. The chapter concludes with an overall view of the topic that was studied.

4.1 Summary of research results and contributions of the study

Listening is a complex skill due to the many cognitive and linguistic processes involved which makes it challenging to assess an individual's auditory skills and listening abilities with one formal assessment tool. This study aimed to investigate the layered auditory skills and listening comprehension abilities of Grade 1 ESL learners by means of the DIN test, the CHAPPS and LCT-2. Their results were compared with a closely matched EFL group. In the ESL participant group significant correlations were found between the LCT-2 and CHAPPS, highlighting the validity of these assessment results in this study. The strong agreement between the CHAPPS and LCT-2 scores suggest that ESL learners experienced greater difficulty as the tasks in the formal outcome measures became more linguistically demanding.

Only minor differences were observed between the two participant groups' DIN test results, however, the ESL participants performed poorer than the EFL participants. The results are in agreement with Kaandorp et al. (2015) who found that the non-nativeness of DIN test-takers had only minor effects on their ability to recognise digit-triplets in noise. Overall the DIN test was a low linguistically demanding assessment that majority of the ESL participants were able to pass. Despite having normal hearing, not all participants in both groups passed the DIN test indicating that they might encounter problems with speech perception in the presence of background noise such as the classroom. Teachers should be aware of their learners' ability to perceive speech in noise as it is an auditory skill necessary for listening comprehension.

Another auditory skill required for successful listening comprehension was assessed in the auditory attention span subsection of the CHAPPS. Similar to the DIN test results, majority of the ESL participants were able to pass this low linguistically demanding subsection. The evaluation of the ESL participants' auditory attention span provided information on their ability to attend to auditory information in the classroom but not their comprehension of the information provided. No significant differences were found between the ESL and EFL participants' performance with their DIN test and auditory attention span scores. This suggested that the basic process of perceiving and attending to auditory information was not a contributing factor to the listening comprehension difficulties of the ESL participants.

When listening with multiple inputs such as the teacher's facial expressions, written text or pictures, the ESL participants were able to successfully understand the auditory information provided. Many of the ESL participants demonstrated adequate listening comprehension abilities when the auditory information was supplemented with visual aids. This listening comprehension task was more linguistically demanding than simply perceiving speech or attending to auditory information, but not as linguistically demanding as understanding purely auditory information with no visual aid.

The results showed that when only auditory information was provided (a highly linguistically demanding task) the ESL participants' listening comprehension of abilities were better when listening in a quiet environment compared to listening in noise. These findings suggest that the higher level auditory skills and listening comprehension abilities of the ESL participants in this study are not sufficiently developed to understand purely auditory information as presented to them in the classroom as they rely on visual cues in attempt to make sense of what they have heard. The results also suggest that reducing classroom noise may assist ESL learners with listening comprehension.

The ESL participants demonstrated the most difficulty with the higher linguistically demanding tasks of the CHAPPS, namely when listening in noise and their auditory memory abilities. The trends in results obtained from the

CHAPPS indicate that the ESL participants' listening comprehension abilities were sufficient for very low linguistically dependent tasks but they have not yet developed adequate skills for high linguistically dependent tasks that are needed for Grade 1.

Unlike the CHAPPS, all subtests of the LCT-2 are highly linguistically dependent as the information presented was purely auditory and no visual aids were available to assist with the participants' listening comprehension and interpretation. The five subtests of the LCT-2 are where the ESL participants showed the poorest results in the study and the differences in their scores compared to the EFL participants were the most significant. The results of the LCT-2 are in accordance with the conclusion drawn from the CHAPPS scores, demonstrating how the ESL participants do not have adequate listening comprehension skills for high linguistically dependent tasks.

The inability of the ESL participants to make inferences of what was said based on their linguistic knowledge and contextual knowledge may offer an explanation for their poor scores in the LCT-2. Vandergrift and Goh (2012) list the core skills for successful listening comprehension as listening for details, listening for global understanding, listening for main ideas, making inferences, predicting and listening selectively. The ESL participants' results of the LCT-2 are of great concern as learners are expected to have adequate listening comprehension skills in LoLT upon entry into Grade 1 in order to develop their CALP. They must be supported to develop adequate listening comprehension abilities in their LoLT in order to close the gap between them and EFL learners as highly linguistically dependent formal instruction is used from Grade 1.

Once the specific layers of difficulty ESL learners experience in auditory skills and listening comprehension have been identified, targeted intervention and curriculum support can be provided. The large differences between the two groups in the study were not surprising. It is perhaps the nature of differences that shows the value of the investigation.

4.2 Theoretical implications of the study

From the many works cited in this study it is evident that listening is a complex phenomenon due to all the auditory skills and linguistic and cognitive processes involved. Much research exists on the difficulties ESL learners experience in the classroom speaking, reading and writing in their L2. However, it is of great concern that the auditory skills and listening abilities of ESL learners has only recently been investigated, even though listening is globally recognized as a key component of language acquisition (Vandergrift & Baker, 2015). Finding from this study can be added to the recently emerging knowledge of layered components listening particularly in ESL individuals.

It is already known that L2 listeners commonly lack harmonious top-down and bottom-up processing (Yeldham, 2016) and therefore may experience difficulties with their auditory skills and listening comprehension abilities. Additionally, L2 listening can also be influenced by many environmental and listener-related factors, adding to the complexity of this skill. Listening is not only a difficult skill to assess but it has not been well defined in literature. This study utilised three formal outcome measures in attempt to assess the layered auditory skills and comprehension components of listening.

The results obtained showed that ESL participants obtained poorer results as the listening tasks became more linguistically dependent. This relationship observed highlights the need for researchers to formulate a comprehensive definition for listening including the various layered components that it involves. The findings of this study provide information on various auditory skills and listening comprehension abilities that may assist in developing an extensive description of the components involved in listening. Once listening and the skills involved in the listening process are better defined, comprehensive assessments of these interrelated and overlapping processes may not be so difficult for SLTs and educators.

4.3 Clinical implications of the study

Ehren (2009) uses a ‘content literacy continuum’ to describe the role of SLTs in the educational context. This is a five-level framework that addresses the speaking, listening, reading and writing needs of learners. Much research exists on the difficulties ESL learners experience when speaking, reading and writing in their L2. However, the listening abilities of ESL learners have only recently been investigated (Vandergrift & Baker, 2015).

Despite research on listening only emerging recently, the roles and responsibilities of SLTs are clearly stipulated. SLTs are required to provide unique contributions to the curriculum by assisting learners who are at risk for school failure or those who struggle in school settings with their language and literacy (ASHA, 2010). Listening is recognized as an interrelated component of language processes and therefore should be targeted by SLTs.

In an educational context, SLTs are required to collaborate with the teachers and engage in parent training in order to optimize prevention approaches and avoid academic failure (ASHA, 2010). Findings from this study highlighted the specific areas difficulties these ESL participants experienced with their auditory skills and listening comprehension. Identifying specific difficulties experienced by this population may allow for more targeted intervention to be employed by SLTs. Teachers can be trained on early identification of learners at risk for auditory skill and listening comprehension difficulties in order for intervention and parent training to commence as soon as possible. Further studies are required with a larger study population in order to generalize the results found.

4.4 Strengths and limitations of the study

4.4.1 Strengths

- The participants in the research and control groups were closely matched for gender, age, family income, and maternal level of education thereby limiting as many confounding variables as possible.

- Possible participants who were born preterm or with low birth weight or any diagnosed developmental conditions were excluded from the study to eliminate any confounding variables that would yield inaccurate results.
- Listening is a complex process and by utilizing three outcome measures in this study, layered auditory skills and comprehension components of listening were assessed comprehensively.
- The reliability and validity of the DIN test, CHAPPS and LCT-2 were established. These published outcome measures assessed various components of listening (auditory skills and listening comprehension) differing in complexity levels, ranging from linguistically independent to highly linguistically dependent.

4.4.2 Limitations

- The study population was a small sample and this should be taken into consideration when interpreting the results, discussion and conclusion.
- The LCT-2 appeared to be valid assessment tool when used in urban setting schools by the researcher. However, some culturally appropriate adaptations were made to the vocabulary of the LCT-2 passages (American words were replaced with South African-English equivalents e.g. 'field trip' was replaced with 'school outing' and 'parent conferences' was replaced with 'parents evening') to ensure reliable results.

4.5 Recommendations for future research

Learners' auditory skills and listening comprehension abilities have been associated with language competence and literacy development (Wildschut, Moodley & Aronstam, 2016; Wium & Louw, 2015) which are necessary for academic success. Further studies should explore if relationships exist between Grade 1 ESL and EFL learners' listening comprehension abilities and various areas of their academic performance. In addition, further studies to determine the auditory skills and listening comprehension abilities of Grade 1 ESL learners should be conducted where a large representative population sample is employed in the study design.

4.6 Conclusion

The varying complexities and features of the three outcome measures used in this study provided the opportunity to describe layered processes of the ESL participants' auditory skills and listening comprehension abilities. From the results it was evident that the ESL participants performed poorer in all three tests compared to their EFL peers. A direct relationship was observed with the results obtained by the ESL participants showing that as the tasks from the three outcome measures became more linguistically dependent, the lower their scores were. This relationship suggested that the auditory skills and listening comprehension difficulties experienced were not strongly related to environmental interferences but rather to intrinsic factors such as their English language proficiency.

This study provides concerning information about how these learners' inadequate auditory skills and English listening comprehension abilities upon entry into Grade 1. This may have negative effects on their acquisition of CALP which is necessary for academic success.

The recent report on the Annual National Assessment of 2014 (Department of Basic Education, 2014) stated that only 1.5 - 17% of learners in Grades 3, 6 and 9 had reached an 'achieved level of performance' in language and mathematics indicating that poor CALP in learners is very common in South Africa. A large number of South African learners make a sudden unsupported transition to English in Grade 1 (Kathard, Pascoe & Moonsamy et al., 2011). Although the study draws attention to the lack of CALP in a single independent school and cannot be generalized, poorly developed listening comprehension skills for English in Grade 1 learners are widespread.

The results isolated the areas of difficulty in auditory skills and listening comprehension these ESL participants experienced. These specific areas of difficulty may be indirectly addressed by SLTs through teachers and parents where education and curriculum support may aid in developing ESL learners' CALP in English.

The focus should then not only be on intervention for listening comprehension difficulties but also on prevention. Early identification of learners at risk for auditory skill and listening comprehension difficulties should occur prior to their Grade 1 academic year. Since there was limited book reading reported at home in the ESL group, parent guidance on developing their child's CALP in the LoLT by means of shared book reading and the oral tradition of storytelling may be an important component of prevention.

References

Abutalebi, J. (2008). Neural aspects of second language representation and language control. *Acta Psychologica, 128*, 466-478. http://dx.doi.org/10.1016/j.actpsy.2008.03.014

Adank, P., Evans, B., Stuart-Smith, J., & Scotti, S. (2009). Comprehension of familiar and unfamiliar native accents under adverse listening conditions. *Journal of Experimental Psychology: Human Perception and Performance, 35*(2), 520-529. ISSN 0096-1523

American Speech-Language-Hearing [ASHA]. (2005). *Guidelines for addressing acoustics in educational settings*. Retrieved from American Speech-Language-Hearing Association: www.asha.org/policy.

ASHA. (2010). *Roles and responsibilities of speech-language pathologists in schools* [Professional Issues Statement]. Available from www.asha.org/policy.

Aukerman, M. (2007). A culpable CALP: Rethinking the conversational/ academic language proficiency distinction in early literacy instruction. *The Reading Teacher, 60*(7), 626 - 635.

Aylett, M., & Turk, A. (2004). The smooth signal redundancy hypothesis: A functional explanation for relationships between redundancy, prosodic prominence, and duration in spontaneous speech. *Language and Speech*, *47*(1), 31–56. http://dx.doi.org/10.1177/00238309040470010201

Bless, C., & Higson-Smith, C. (2004). *Fundamentals of social research methods.* (3rd ed.). Cape Town: Juta & Company Ltd.

Borodkin, K., & Faust, M. (2014). Naming abilities in low-proficiency second language learners. *Journal of Learning Disabilities, 47*(3), 237-253. http://dx.doi.org/10.1177/0022219412453769

Bowers, L., Huisingh, R., & LoGuidice, C. (2006). *The Listening Comprehension Test 2*, PRO-ED, Inc., Texas, USA.

Brunfaut, T., & Revesz, A. (2015). The role of task and listener characteristics in second language listening. *TESOL Quarterly, 49*(1), 141-168. http://dx.doi.org/10.1002/tesq.168

Buck, G. (2001). *Assessing listening.* Cambridge, England: Cambridge University Press.

Buckingham, J., Beaman, R., & Wheldall, K. (2014). Why poor children are more likely to become poor readers: The early years. *Educational Review*, *66*, 428–446. http://dx.doi.org/10.1080/00131911.2013.795129

Chang, A. (2009). Gains to L2 listeners from reading while listening vs. listening only in comprehending short stories. *System, 37*(4), 652-663. http://dx.doi.org/10.1016/j.system.2009.09.009

Chang, A. (2010). Second-language listening anxiety before and after a 1-yr. intervention in extensive listening compared with standard foreign language instruction. *Perceptual and Motor Skills, 110*(2), 355-365. http://dx.doi.org/10.2466/pms.110.2.355-365

Chang, A., Wu, B., & Pang, J. (2013). Second language listening difficulties perceived by low-level learners. *Perceptual and Motor Skills: Learning and Memory, 16*, 415-434. http://dx.doi.org/10.2466/22.23.PMS.116.2.415-434

Clifford, V., Rhodes, A., & Paxton, G. (2014). Learning difficulties or learning English difficulties? Additional language acquisition: An update for paediatricians. *Journal of Paediatrics and Child Health, 50*(3), 175-181. http://dx.doi.org/10.1111/jpc.12396

Cole, E., & Flexer, C. (2015). *Children with hearing loss: Developing listening and talking, birth to six*, California, USA, Plural Publishing, Inc.

Coplan, J. (2010). *Making sense of autism spectrum disorders.* New York: Bantam Books.

Dawes, P., Bishop, D., Sirimanna, T., & Bamiou, D. E. (2008). Profile and aetiology of children diagnosed with auditory processing disorder (APD). *International*

Journal of Pediatric Otorhinolaryngology, 72, 483-489. http://dx.doi.org/10.1016/j.ijporl.2007.12.007

Department of Basic Education [DBE]. (2010). *The status of the language of learning and teaching (LoLT) in South African public schools: A quantitative overview.* Pretoria: Department of Basic Education.

Department of Health. (2015). *Ethics in health research: Principles, structures and processes* (2nd ed.). South Africa: Department of Health.

Durgunoglu, A. Y., Nagy, W. E., & Hancin-Bhatt, B. J. (1993). Cross-language transfer of phonological awareness. *Journal of Educational Psychology*, *85*, 453-465.

Ehren, B. (2009). Response to intervention: SLPs as linchpins in secondary schools. *ASHA Leader*, May 5, 10-13

Flege, J., Schirru, C., & MacKay, I. (2003). Interaction between the native and second language phonetic subsystems. *Speech Communication, 40*, 467-491. http://dx.doi.org/10.1016/S0167-6393(02)00128-0

Frith, A. (2011). City of Tshwane: Metropolitan Municipality 799 from Census 2011. Retrieved from Census 2011: https://census2011.adrianfrith.com/place/799.

Ferguson, M., Hall, R., Riley, A., & Moore, D. (2010). Communication, Listening, cognitive and speech perception skills in children with auditory processing disorder (APD) or specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research, 54,* 211-228. http://dx.doi.org/ 10.1044/1092-4388(2010/09-0167)

Goh, C. (1999). How much do learners know about the factors that influence their listening comprehension? *Hong Kong Journal of Applied Linguistics, 4*(1), 14-42.

Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review, 26*, 55-88. http://dx.doi.org/ 10.1016/j.dr.2005.11.002

Jordaan, H. (2011). Semantic processing skills of Grade 1 English language learners in two educational contexts. *South African Journal of Education*, *31*, 518-534. ISSN 0256-0100

Kaandorp, M., De Groot, A., Festen, J., Smits, C., & Goverts, S. (2015). The influence of lexical-access ability and vocabulary knowledge on measures of speech recognition in noise. *International Journal of Audiology, 55*, 157–167. http://dx.doi.org/10.3109/14992027.2015.1104735

Kahn-Horwitz, J., Shimron, J., & Sparks, R. L. (2005). Predicting foreign language reading achievement in elementary school students. *Reading and Writing*, *18*, 527-558. http://dx.doi.org/ 10.1007/s11145-005-3179-x

Kathard, H., Pascoe, M., & Moonsamy, S. et al. (2011). How can speech-language therapists and audiologists enhance language and literacy outcomes in South Africa ? (And why we urgently need to). *South African Journal of Communication Disorders, 58*, 59-71. http://dx.doi.org/10.4102/sajcd.v58i2.27

Landsberg, E., Kruger, D., & Nel., N. (eds). (2011). *Addressing Barriers to Learning: A South African Perspective*. Pretoria: Van Schaik.

Leedy, P., & Ormrod, J. (2014). *Practical research: Planning and design,* 11th edn., USA: Pearson Education Limited.

Leikin, M., Schwartz, M., & Share, D. (2009). General and specific benefits of bi-literate bilingualism: A Russian–Hebrew study of beginning literacy. *Reading and Writing*, *23*, 269-292. http://dx.doi.org/ 10.1007/s11145-009-9210-x

Lindsey, K., Manis, F., & Bailey, C. (2003). Prediction of first-grade reading in Spanish-speaking English-language learners. *Journal of Educational Psychology*, *95*, 482–494. http://dx.doi.org/ 10.1037/0022-0663.95.3.482

Manoel, R., Feniman, M., Buffa, M., Maximino, L., Lauris, J., & Freitas, J. (2010). Children's listening with cleft lip and palate in the school. *International Archives of Otorhinolaryngology, 14*(3), 280-287. http://dx.doi.org/ 10.1590/S1809-48722010000300003

Maxwell, D., & Satake, E. (2006). *Research and statistical methods in communication sciences and disorders,* New York, USA, Thompson/Delmar Learning.

Methula, N., Visser, M., & Zulu, S. (2016). Digits-in-noise test in children - age norms for English home and first additional language speakers, South Africa. University of Pretoria: Unpublished dissertation.

Moodley, P., Kritzinger, A., & Vinck, B. (2014). Comparison of educational facilitation approaches for Grade R English additional language learning in rural Mpumalanga. *South African Journal of Education, 36*(3), 1-17. ISSN 0256-0100

Moodley, P., Kritzinger, A., & Vinck, B. (2016). Variables associated with Grade R English additional language acquisition in multilingual rural Mpumalanga schools. *South African Journal of Education, 34*(2), 1-15. http://dx.doi.org/10.15700/saje.v36n3a1253

Moore, D., Ferguson, M., Edmondson-Jones, M., Ratib, S., & Riley, A. (2010). Nature of auditory processing in children. *Pediatrics, 126*(2), 382-366. http://dx.doi.org/ 10.1542/peds.2009-2826

Nelson, P., Kohnert, K., Sabur, S., & Shaw, D. (2005). Classroom noise and children learning through a second language: Double jeopardy? *Language, Speech, and Hearing Services in Schools, 36*, 219-229. http://dx.doi.org/ 10.1044/0161-1461(2005/022)

Nichols, E., & Joanisse, M. (2016). Functional activity and white matter microstructure reveal the independent effects of age of acquisition and proficiency on second-language learning. *NeuroImage, 143*, 15-25. http://dx.doi.org/10.1016/j.neuroimage.2016.08.053

O'Brien, I., Segalowitz, N., Collentine, J., & Freed, B. (2006). Phonological memory and lexical, narrative, and grammatical skills in second language oral production by adult learners. *Applied Psycholinguistics*, *27*, 377-402. https://doi.org/10.1017/S0142716406060322

O'Brien, I., Segalowitz, N., Freed, B., & Collentine, J. (2007). Phonological memory predicts second language oral fluency gains in adults. *Studies in Second Language Acquisition*, *29*, 557-582. https://doi.org/10.1017/S027226310707043X

Owens, R.E. (2012). *Language development: An introduction,* 8th edn., Boston, USA, Pearson Education Inc.

Perani, D., & Abutalebi, J. (2005). The neural basis of first and second language processing. *Current Opinion in Neurobiology, 15*(2), 202–206. https://doi.org/10.1016/j.conb.2005.03.007

Pichora-Fuller, K. (2008). Use of supportive context by younger and adult listeners: Balancing bottom-up and top-down information processing. *International Journal of Audiology, 47*, 72-82. http://dx.doi.org/10.1080/14992020802307404

Pienaar, K., & Taljaard, J. (2016). Validity of a simple speech in noise test to screen for hearing loss in children. University of Pretoria: Unpublished article.

Potgieter, J. M., Swanepoel, D., Myburgh, H. C., Hopper, T. C., & Smits, C. (2016). Development and validation of a smartphone-based digits-in-noise hearing test in South African English. *International Journal of Audiology*, 55(7), 405-411. http://dx.doi.org/10.3109/14992027.2016.1172269

Raizada, R., Richards, T., Meltzoff, A., & Kuhl, P. (2008). Socioeconomic status predicts hemispheric specialisation of the left inferior frontal gyrus in young children. *NeuroImage*, *40*, 1392–1401. http://dx.doi.org/10.1016/j.neuroimage.2008.01.021.

Richards, J. (2014). *Error analysis: Perspectives on second language acquisition.* York, USA: Routledge.

Rost, M. (2011). *Teaching and researching listening* (2nd ed.). Harlow, England: Pearson Education.

Saville-Troike, M. (2012). *Introducing second language acquisition.* New York: Cambridge University Press.

Schafer, A., Speer, S., & Warren, P. (2004). Prosodic influences on the production and comprehension of syntactic ambiguity in a game-based conversation task. In J. Trueswell & M. Tanenhaus (Eds.). *Approaches to studying world situated language use*, 209–225. Cambridge, MA: MIT Press.

Sharma, M., Purdy, S., & Kelly, A. (2009). Comorbidity of auditory processing, language, and reading disorders. *Journal of Speech, Language, and Hearing Research, 52*(3), 706-722. http://dx.doi.org/ 10.1044/1092-4388(2008/07-0226)

Shi, L. (2010). Perception of acoustically degraded sentences in bilingual listeners who differ in age of English acquisition. *Journal of Speech, Language and Hearing Research, 53*(4), 821-835. http://dx.doi.org/10.1044/1092-4388(2010/09-0081)

Smits, C., Goverts, T., & Festen, J. (2013). The digits-in-noise test: Assessing auditory speech recognition abilities in noise. *The Journal of the Acoustical Society of America, 133*(3), 1693-1706. http://dx.doi.org/10.1121/1.4789933

Smoski, W. J., Brunt, M. A., & Tannahill, J. C. (1998). *Children's Auditory Performance Scale*, Florida, USA, The Educational Audiology Association.

Song, L. (2012). On the variability of interlanguage. *Theory and Practice in Language Studies, 2*(4), 778-783. http://dx.doi.org/10.4304/tpls.2.4.778-783

Statistics South Africa. (2011). *Census 2011: Documented immigrants in South Africa*. Pretoria: Statistics South Africa.

Swanepoel, D., Myburgh, H., Howe, D., Mahomed, F., & Eikelboom, R. (2014). Smartphone hearing screening with integrated quality control and data management, *International Journal of Audiology, 53*(12), 841–849. http://dx.doi.org/ 10.3109/14992027.2014.920965

Tabri, D., Chacra, K., & Pring, T. (2011). Speech perception in noise by monolingual, bilingual and trilingual listeners. *International Journal of Language & Communication Disorders, 46*(4), 411-422. http://dx.doi.org/10.3109/13682822.2010.519372

Taylor, S. & Von Fintel, M. (2016). Estimating the impact of language of instruction in South African primary schools: A fixed effects approach. *Economics of Education Review, 50*, 75- 89. http://dx.doi.org/10.1016/j.econedurev.2016.01.003

Turk, A. (2010). Does prosodic constituency signal relative predictability? A smooth signal redundancy hypothesis. *Laboratory Phonology, 1*(2), 227-262. http://dx.doi.org/10.1515/labphon.2010.012

United States Census Bureau. (2015). *Age by language spoken at home for the population 5 years and older.* Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_1YR_C16007&prodType=table

Vandergrift, L., & Baker, S. (2015). Learner variables in second language listening comprehension: An exploratory path analysis. *Language Learning, 65*(2), 390-416. http://dx.doi.org/10.1111/lang.12105

Vandergrift, L., & Goh, C. (2012). *Teaching and learning second language listening: Metacognition in action*, New York, USA, Routledge.

Vandergrift, L. (1999). Facilitating second language listening comprehension: Acquiring successful strategies. *ELT Journal, 53*, 168-176.

Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics, 24*, 3-25. https://doi.org/10.1017/S0267190504000017

Vandergrift, L. (2007). Recent developments in second and foreign language listening comprehension research. *Language Teaching*, *40*, 191–210. https://doi.org/10.1017/S0261444807004338

Vandergrift, L. (2011). Second language listening: Presage, process, product, and pedagogy. In E. Hinkel (Ed.). *Handbook of research in second language teaching and learning.* New York, USA: Routledge.

Van Rooyen, D. & Jordaan, H. (2009). An aspect of language for academic purposes in secondary education: Complex sentence comprehension by learners in an

integrated Gauteng school. *South African Journal of Education, 29*, 271-287. ISSN 2076-3433

Wildschut, Z., Moodley, T., & Aronstam, S. (2016). The baseline assessment of Grade 1 learners' literacy skills in a socio-economically disadvantaged school setting. *South African Journal of Childhood Education, 6*(1), 1-9. http://dx.doi. org/10.4102/sajce.v6i1.340

Wilson, W., Jackson, A., Pender, A., Rose, C., Wilson, J., Heine, C., & Khan, A. (2011). The CHAPS, SIFTER, and TAPS-R as predictors of (C)AP and (C)APD. *Journal of Speech, Language, and Hearing Research, 54*, 278-291. http://dx.doi. org/ 10.1044/1092-4388(2010/09-0273)

Wium, A., & Louw, B. (2015). The South African national school curriculum: Implications for collaboration between teachers and speech-language therapists working in schools. *South African Journal of Childhood Education, 5*(1). http://dx.doi.org/10.4102/sajce.v5i1.348

Yeldham, M. (2016). Second language listening instruction: Comparing a strategies-based approach with an interactive, strategies/bottom-up skills approach. *TESOL Quarterly, 50*(2), 394-420. http://dx.doi.org/ 10.1002/tesq.233

Yilmaz, H., & Yavuz, F. (2015). The problems young learners encounter during listening skills. *Procedia - Social and Behavioral Sciences, 197*, 2046-2050. https://doi.org/10.1016/j.sbspro.2015.07.570

Appendices

Appendix A: Ethical clearance letter Faculty of Humanities Research Ethics Committee

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Research Ethics Committee

1 March 2017

24 February 2017

Dear Prof Vinck

Project:	**Listening skills and English second language proficiency of Grade 1 learners**
Researcher:	**K-L Anderssen**
Supervisor:	**Prof A Kritzinger**
Department:	**Speech-Langugae Pathology and Audiology**
Reference:	**13066456 (GW20170206HS)**

Thank you for your response to the Committee's correspondence of 24 February 2017.

The **Research Ethics Committee** notes that the outstanding permission from *Tyger Valley College)* was submitted as requested and has therefore given **final approval** for the above application at an *ad hoc* meeting on 1 March 2017. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

The Committee requests you to convey this approval to the researcher.

We wish you success with the project.

Sincerely

Prof Maxi Schoeman
Deputy Dean: Postgraduate and Research Ethics
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: tracey.andrew@up.ac.za

Research Ethics Committee Members: Prof MME Schoeman (Deputy Dean); Prof KL Harris; Dr L Blokland; Dr R Fasselt; Ms KT Govinder; Dr E Johnson; Dr C Panebianco; Dr C Puttergill; Dr D Reyburn; Prof GM Spies; Prof E Taljard; Ms B Tsebe; Dr E van der Klashorst; Mr V Sithole

Appendix B: Permission letters from primary schools

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

Faculty of Humanities
Department of Speech-Language Pathology and Audiology

Dear Mrs van Eeden
Principal of Confidence College

INFORMATION LEAFLET & PERMISSION FOR DATA COLLECTION

Title of the research study: Listening skills and English second language proficiency of Grade 1 learners

INTRODUCTION
This leaflet should provide adequate information to assist you in deciding whether or not you would like your school to participate in the present study. It is important that you fully understand what is involved and that you agree with the procedures that will be carried out.

WHAT IS THE PURPOSE OF THIS RESEARCH STUDY?
It is important to understand the listening profile of children whose second language is English. By understanding the listening difficulties this group of learners may experience, they can be identified early on in their academic career, assessed adequately and receive intervention as soon as possible. Grade 1 learners, between the ages of 6 and 7, who have been exposed to English between 12 to 24 months, and their teachers will be asked to participate in the study.

PERMISSION IS KINDLY REQUESTED TO CONDUCT THE STUDY AT YOUR SCHOOL AND TO GAIN ACCESS TO THE LEARNER REGISTER

EXPLANATION OF PROCEDURES TO BE FOLLOWED
The researcher will go through learner register to select possible participants for the study. Once participants have been selected informed consent from the parents and teachers as well as child assent will be obtained. Each child will be assessed for the duration of 30 minutes on two separate occasions. The Grade 1 teachers will be asked to attend a training session and then complete a questionnaire for each participant, providing information on the participants' listening skills in their classroom environment. The researcher will conduct formal testing outside of the classroom in order to determine the participants' ability to listen to speech in noise and their English language proficiency.

HAS THE STUDY RECEIVED ETHICAL CLEARANCE?
The proposal and ethical clearance application for this research study have been submitted to the Faculty of Humanities' Research Ethics Committee, University of Pretoria. Written approval has been granted by this committee. A copy of the ethical clearance letter may be obtained from the researcher should you wish to review it.

MAY ANY OF THESE PROCEDURES RESULT IN DISCOMFORT OR INCONVENIENCE?

Part of the study is conducted by means of a survey, therefore, no discomfort or inconvenience will be caused. The formal testing will involve taking a child out of class for approximately 60 minutes resulting in minimal inconvenience. The actual application of the tests will not cause any discomfort. Participants' safety and security will by no means be compromised if they feel uncomfortable in this study.

WHAT ARE THE RISKS INVOLVED IN THIS RESEARCH STUDY?

No risks are involved when participating in this research study.

CONFIDENTIALITY

All information obtained during the course of this research study is strictly confidential.
Data will be securely stored, electronically, for a minimum of 15 years at the University of Pretoria.

If you have any further questions, please feel free to contact me, Kate-Lyn Anderssen at 083 267 3682 during office hours or via e-mail at katelynanderssen@gmail.com.

Yours sincerely

Miss K Anderssen - Researcher

A. M. Kritzinger

Prof. A Kritzinger - Study leader

Dr L Pottas - Study leader

Prof. B Vinck – HEAD: Department of Speech-Language Pathology and Audiology

---

PERMISSION FROM THE SCHOOL

I hereby confirm that I have been informed by the researcher about the nature, conduct, benefits and risks of the research study titled: "Listening skills and English second language proficiency of Grade 1 learners". I give permission that Kate-Lyn Anderssen can go through the student register to select possible participants for the study and collect data at Confidence College in 2017.

Signed at Confidence College on the 18 day of January 2017

Anelze Van Eeden
Principal's Name

Signature

Communication Pathology Building
Dept. of Speech-Language Pathology and Audiology
Corner of Lynnwood Road and Roper Street, Hatfield
Private Bag X20, Hatfield, 0028
University of Pretoria
PRETORIA
Republic of South Africa

Tel: 012 420 2381 bart.vinck@up.ac.za

www.up.ac.za

CONFIDENCE COLLEGE
P.O. Box 14484
Hatfield 0028
Tel: 012 323 5766/7 | Fax: 012 323 1196

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

Faculty of Humanities
Department of Speech-Language Pathology and Audiology

Dear Mr Langley
Principal of Tyger Valley College

INFORMATION LEAFLET & PERMISSION FOR DATA COLLECTION

Title of the research study: Listening skills and English second language proficiency of Grade 1 learners

INTRODUCTION

This leaflet should provide adequate information to assist you in deciding whether or not you would like your school to participate in the present study. It is important that you fully understand what is involved and that you agree with the procedures that will be carried out.

WHAT IS THE PURPOSE OF THIS RESEARCH STUDY?

It is important to understand the listening profile of children whose second language is English. By understanding the listening difficulties this group of learners may experience, they can be identified early on in their academic career, assessed adequately and receive intervention as soon as possible. Grade 1 learners, between the ages of 6 and 7, who have been exposed to English between 12 to 24 months, and their teachers will be asked to participate in the study.

PERMISSION IS KINDLY REQUESTED TO CONDUCT THE STUDY AT YOUR SCHOOL AND TO GAIN ACCESS TO THE LEARNER REGISTER

EXPLANATION OF PROCEDURES TO BE FOLLOWED

The researcher will go through learner register to select possible participants for the study. Once participants have been selected informed consent from the parents and teachers as well as child assent will be obtained. Each child will be assessed for the duration of 30 minutes on two separate occasions. The Grade 1 teachers will be asked to attend a training session and then complete a questionnaire for each participant, providing information on the participants' listening skills in their classroom environment. The researcher will conduct formal testing outside of the classroom in order to determine the participants' ability to listen to speech in noise and their English language proficiency.

HAS THE STUDY RECEIVED ETHICAL CLEARANCE?

The proposal and ethical clearance application for this research study have been submitted to the Faculty of Humanities' Research Ethics Committee, University of Pretoria. Written approval has been granted by this committee. A copy of the ethical clearance letter may be obtained from the researcher should you wish to review it.

MAY ANY OF THESE PROCEDURES RESULT IN DISCOMFORT OR INCONVENIENCE?

Part of the study is conducted by means of a survey, therefore, no discomfort or inconvenience will be caused. The formal testing will involve taking a child out of class for approximately 60 minutes resulting in minimal inconvenience. The actual application of the tests will not cause any discomfort. Participants' safety and security will by no means be compromised if they feel uncomfortable in this study.

WHAT ARE THE RISKS INVOLVED IN THIS RESEARCH STUDY?

No risks are involved when participating in this research study.

CONFIDENTIALITY

All information obtained during the course of this research study is strictly confidential. Data will be securely stored, electronically, for a minimum of 15 years at the University of Pretoria.

If you have any further questions, please feel free to contact me, Kate-Lyn Anderssen at 083 267 3682 during office hours or via e-mail at katelynanderssen@gmail.com.

Yours sincerely

Miss K Anderssen - Researcher

A.M. Kritzinger

Prof. A Kritzinger - Study leader

Dr L Pottas - Study leader

Prof. B Vinck - HEAD: Department of Speech-Language Pathology and Audiology

---

PERMISSION FROM THE SCHOOL

I hereby confirm that I have been informed by the researcher about the nature, conduct, benefits and risks of the research study titled: "Listening skills and English second language proficiency of Grade 1 learners". I give permission that Kate-Lyn Anderssen can go through the student register to select possible participants for the study and collect data at Tyger Valley College in 2017.

Signed at TYGER VALLEY COLLEGE on the 23RD day of JANUARY 2017.

G. B. LANGLEY

Principal's Name

Signature

Communication Pathology Building
Dept. of Speech-Language Pathology and Audiology
Corner of Lynnwood Road and Roper Street, Hatfield
Private Bag X20, Hatfield, 0028
University of Pretoria
PRETORIA
Republic of South Africa

Tel: 012 420 2381

bart.vinck@up.ac.za

www.up.ac.za

Appendix C: Informed Consent

Teacher informed consent letter

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

March 2017

Faculty of Humanities
Department of Speech-Language Pathology and Audiology

Dear Grade 1 Teacher

INFORMATION LEAFLET & INFORMED CONSENT

Title of the research study: Listening skills and English second language proficiency of Grade 1 learners

INTRODUCTION

This leaflet should provide adequate information to assist you in deciding whether or not you would like to participate in the present study. Before signing the informed consent, it is important that you fully understand what is involved and that you agree with the procedures that will be carried out.

WHAT IS THE PURPOSE OF THIS RESEARCH STUDY?

My research study involves two groups of children: children whose home language is English and children whose second language is English. I am interested to know if listening in a noisy environment is more difficult for children learning in their second language than it is for English first language learners. Listening is a complex process and there are many factors such as classroom noise, how loud the teacher speaks or listening to an unfamiliar language that may make listening difficult. Listening is considered one of the factors that will impact second language learning. Because listening difficulties interfere with language learning, this may have a negative effect on childrens' academic success. If listening difficulties can be identified now in Grade 1, children can be helped early on in their academic career.

You are kindly requested to participate in the study. Your participation could help us greatly in the study. The school has given permission to me to conduct my research study with their Grade 1 learners on the school grounds, if permission is obtained by their parent/guardian.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

If you agree to participate, you will be trained to complete a checklist about each learner participant's listening skills in the classroom, under different circumstances such as noisy, quiet and ideal listening conditions. You will observe the child and then complete the checklist in 15 minutes' time. A number of children in your class may participate in the study.

HAS THE STUDY RECEIVED ETHICAL CLEARANCE?

The proposal and ethical clearance application for this research study have been submitted to the Faculty of Humanities' Research Ethics Committee, University of Pretoria. Written approval has been granted by this committee. A copy of the ethical clearance letter may be obtained from the researcher should you wish to review it.

MAY THE PROCEDURES RESULT IN DISCOMFORT TO YOU?
After training it will be easy to complete the checklist. You should feel competent in completing the checklist, therefore you will not experience any discomfort.

WHAT ARE THE RISKS INVOLVED IN THIS RESEARCH STUDY?
No risks are involved when participating in this research study.

CONFIDENTIALITY
All information obtained during the course of this research study is strictly confidential.
Data that may be reported s will not include any information which identifies you, the learner or the school as participants in this research study. Data will be securely stored, electronically, for a minimum of 15 years at the University of Pretoria.

If you have any further questions, please feel free to contact me, Kate-Lyn Anderssen at 083 267 3682 during office hours or via e-mail at katelynanderssen@gmail.com.

Yours sincerely

Miss K Anderssen - Researcher

Prof. A Kritzinger - Study leader

Dr L Pottas - Study leader

Prof. B Vinck – HEAD: Department of Speech-Language Pathology and Audiology

---

INFORMED CONSENT

I hereby confirm that I have been informed by the researchers about the nature, conduct, benefits and risks of the research study titled: "Listening skills and English second language proficiency of Grade 1 learners". I give permission that Kate-Lyn Anderssen may use the data from the checklists I have completed.

I am aware that any personal details regarding my participation in the research study will be anonymously processed into a research report and that I may withdraw my participation from the research study at any time.

Herewith I give consent that the data obtained in the current study may be used for future research as well:

Yes ☐ No ☐ (Please tick the relevant block)

Teacher's Name _____

Teacher's Signature _____ Date _____

Researcher's name: Kate-Lyn Anderssen

Researcher's Signature _____ Date _____

Parent informed consent letter

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

Faculty of Humanities
Department of Speech-Language Pathology and Audiology

March 2017

Dear Parent/Guardian

INFORMATION LEAFLET & INFORMED CONSENT

Title of the research study: Listening skills and English second language proficiency of Grade 1 learners

INTRODUCTION

This leaflet should provide adequate information to assist you in deciding whether or not you would like your child to participate in the present study. Before signing the informed consent, it is important that you fully understand what is involved and that you agree with the procedures that will be carried out.

WHAT IS THE PURPOSE OF THIS RESEARCH STUDY?

My research study involves two groups of children: children whose home language is English and children whose second language is English. I am interested to know if listening in a noisy environment is more difficult for children learning in their second language than it is for English first language learners. Listening is a complex process and there are many factors such as classroom noise, how loud the teacher speaks or listening to an unfamiliar language that may make listening difficult. Listening is considered one of the factors that will impact second language learning. Because listening difficulties interfere with language learning, this may have a negative effect on childrens' academic success. If listening difficulties can be identified now in Grade 1, children can be helped early on in their academic career.

You are kindly requested to allow your child to participate in the study. Your child's participation could help us greatly in the study. The school has given permission to me to conduct my research study with their Grade 1 learners on the school grounds, if permission is obtained by their parent/guardian.

WHAT IS THE DURATION OF THIS RESEARCH STUDY?

Each child participant will be assessed for the duration of 30 minutes on two occasions.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

All tests will be conducted at your child's school, during school hours. Three trained researchers will be conducting tests but ensure as little interruption as possible to your child's academic program. The researcher will conduct a hearing screening on your child to check that the hearing is normal so that they are able to listen. The researcher will conduct formal testing outside of the classroom to see how your child is able to listen with background noise present and how they speak and understand English. The teachers will be asked to complete a questionnaire about your child's listening in the classroom under different circumstances such as noisy, quiet and ideal listening conditions.

HAS THE STUDY RECEIVED ETHICAL CLEARANCE?
The proposal and ethical clearance application for this research study have been submitted to the Faculty of Humanities' Research Ethics Committee, University of Pretoria. Written approval has been granted by this committee. A copy of the ethical clearance letter may be obtained from the researcher should you wish to review it.

MAY ANY OF THESE PROCEDURES RESULT IN DISCOMFORT OR INCONVENIENCE?
I have been trained in administering these tests on children and will ensure the experience is enjoyable for your child. Before any assessment begins your child will have to colour a thumbs-up or thumbs-down picture to indicate their voluntary participation. I will explain the procedures to your child and emphasize that they can stop any time they like and they will not get into trouble if they do not wish to participate. The formal testing will involve taking your child out of class for approximately 30 minutes on two separate occasions, resulting in minimal inconvenience. The actual application of the tests will not cause any discomfort and your child's safety and security will by no means be compromised.

WHAT ARE THE RISKS INVOLVED IN THIS RESEARCH STUDY?
No risks are involved when participating in this research study.

CONFIDENTIALITY
All information obtained during the course of this research study is strictly confidential.
Data that may be reported will not include any information which identifies you, your child or the school as participants in this research study. Data will be securely stored, electronically, for a minimum of 15 years at the University of Pretoria.

If you have any further questions, please feel free to contact me, Kate-Lyn Anderssen at 083 267 3682 during office hours or via e-mail at katelynanderssen@gmail.com.

Yours sincerely

Miss K Anderssen - Researcher

Prof. A Kritzinger - Study leader

Dr L Pottas - Study leader

Prof. B Vinck – Head: Department of Speech-Language Pathology and Audiology

---

INFORMED CONSENT

I hereby confirm that I have been informed by the researchers about the nature, conduct, benefits and risks of the research study titled: "Listening skills and English second language proficiency of Grade 1 learners". I give permission that Kate-Lyn Anderssen may collect data from my child.

I am aware that any personal details regarding my child's participation in the research study will be anonymously processed into a research report.

I am aware that I may withdraw my child from the research study at any time. My child is allowed to say he/she does not want to participate in the study and understands the researcher will not be angry.

Please indicate whether you give permission that the data may be used for future research. Herewith I give consent that the data obtained in the current study may be used for future research as well:

Yes ☐ No ☐ (Please tick the relevant block)

Child's Name _____

(Please print)

Parent/Guardian's Name _____

(Please print)

Signature _____ Date _____

Researcher's name: Kate-Lyn Anderssen

Researcher's Signature _____ Date _____

Communication Pathology Building
Dept. of Speech-Language Pathology and Audiology
Corner of Lynnwood Road and Roper Street, Hatfield
Private Bag X20, Hatfield, 0028
University of Pretoria
PRETORIA
Republic of South Africa

Tel: 012 420 2381

bart.vinck@up.ac.za

www.up.ac.za

Child assent

CHILD ASSENT FORM

Dear (Child's name) _____

You have been chosen to help me do a test on your ears to see how children in Grade 1 listen. I will first show you how the test is done. It will not hurt you at all. All you need to do is listen to some numbers and talk about some pictures.

You are allowed to ask me any questions you want to. You are also allowed to say you do not want to do the listening test or talk about the picture. If you do not want to do the test I will not be angry and you will not get into trouble.

If you want to help me and do some listening and talking colour in the thumbs-up

If you do not want to do the test you can colour in the thumbs-down

Researcher's name: Kate-Lyn Anderssen

Researcher's Signature _____ Date _____

Appendix D: Case history form

PARENT INTERVIEW QUESTIONNAIRE

Dear Parent/Guardian

Thank you very much for taking time out of your day to assist me with my research study. Your assistance is greatly appreciated.
My study involves Grade 1 learners. Your answers to the questions below will give me a holistic view of your child as a possible participant in the study. The information you provide will remain strictly confidential and anonymous.
If you have any questions, please feel free to contact me, Kate-Lyn Anderssen at 083 267 3682 during office hours or via e-mail at katelynanderssen@gmail.com.

--- --- --- --- ---

Please answer all the questions below and tick the relevant boxes. Questions where more than one answer may be provided will be marked with a *. Please feel free to add comments or elaborate where you feel necessary.

Child Information				
Child's name				
Date of birth	YYYY / MM / DD			
Chronological age	In months			
Gender	□ Male		□ Female	
Siblings	Number of siblings:	□ 1	□ 2	□ 3
	Birth order: □ 1st	□ 2nd	□ 3rd	□ 4th
First language	□ Afrikaans	□ isiZulu	□ Siswati	
	□ English	□ Sepedi	□ Tshivenda	
	□ isiNdebele	□ Sesotho	□ Xitsonga	
	□ isiXhosa	□ Setswana	□ Other: SPECIFY	
Caregiver Information				
Caregiver's name				
Date of birth	YYYY / MM / DD			
Chronological age	In years			
Relationship to child	□ Mother	□ Father	□ Guardian	
	□ Other: PLEASE SPECIFY			
Educational qualifications	□ Grade 9	□ Matric	□ Further	
Occupation	PLEASE SPECIFY			
	□ Professional	□ Not professional		
Prenatal History				
Pregnancy duration	Number of weeks:			
Child's birth weight	Kilograms:			
Child's Medical History				
Has your child had a hearing test at birth or later in life?	□ Yes	□ No		
	If Yes, when and what were the results:			

Medical conditions your child has experienced	□ Ear infections □ Draining ear □ Tinnitus	□ Dizziness □ Chicken pox □ Mumps	□ Measles □ Sinusitis □ Tonsillitis
	□ Other: PLEASE SPECIFY		
Has your child been hospitalized or had any serious accidents?	□ No	□ Yes	
	If Yes, when and why:		
Is your child on any medication	□ No	□ Yes: PLEASE SPECIFY	

Child's Developmental History			
Developmental milestones	□ Crawl - AGE	□ Sit - AGE	□ Stand - AGE
	□ Walk - AGE	□ Words - AGE	□ Sentences-AGE
Developmental conditions	□ Language impairment	□ Global developmental delay	
	□ Hearing loss	□ Autism spectrum disorder	
	□ Auditory processing disorder	□ Epilepsy	
	□ Attention deficit hyperactivity disorder	□ Other: SPECIFY	
Child's Language Exposure			
Language(s) spoken at home or that the child is exposed to	□ Afrikaans	□ isiZulu	□ Siswati
	□ English	□ Sepedi	□ Tshivenda
	□ isiNdebele	□ Sesotho	□ Xitsonga
	□ isiXhosa	□ Setswana	□ Other: SPECIFY

	Type of exposure	**Years of exposure**	**Duration of exposure: Frequent (weekly)/ Occasional**	
Child's exposure to English	1) Mother		□ Frequent	□ Occasional
	2) Father		□ Frequent	□ Occasional
	3) Caregivers other than parents		□ Frequent	□ Occasional
	4) Family gatherings		□ Frequent	□ Occasional
	5) Religious gatherings		□ Frequent	□ Occasional
	6) Playing with friends or family members		□ Frequent	□ Occasional
	7) Television		□ Frequent	□ Occasional
	8) Books		□ Frequent	□ Occasional
	9) Radio		□ Frequent	□ Occasional
	10) Video games		□ Frequent	□ Occasional
	11) Nursery school/day care		□ Frequent	□ Occasional
	12) Grade R		□ Frequent	□ Occasional
	13) Other: PLEASE SPECIFY		□ Frequent	□ Occasional

Appendix E: Children's Auditory Processing Performance Scale

CHILDREN'S AUDITORY PROCESSING PERFORMANCE SCALE

Child's name:

_____

Date of birth and age (years and months):

_____

Name of person completing the form:

_____

Relationship to child: parent / legal guardian / teacher

PLEASE READ THE INSTRUCTIONS CAREFULLY

Answer all questions by comparing this child to other children of similar age and background. Do not answer the questions based only on the difficulty of the listening condition. For example, all 8-year-old children, to a certain extent, may not hear and understand when listening in a noisy room. That is, this would be a difficult listening condition for all children. However, some children may have more difficulty in this listening condition than others. You must judge whether or not this child has MORE difficulty than other children in each listening condition cited. Please make your judgment using the following response choices: (**CIRCLE** a number for each item.)

RESPONSE CHOICES:

LESS DIFFICULTY. . . . . +1
SAME AMOUNT OF DIFFICULTY. 0
SLIGHTLY MORE DIFFICULTY. . . . . -1
MORE DIFFICULTY. . . . . -2
CONSIDERABLY MORE DIFFICULTY. . . . . -3
SIGNIFICANTLY MORE DIFFICULTY. . . . . -4
CANNOT FUNCTION AT ALL. . . . . -5

Listening Condition – NOISE							
If listening in a room where there is background noise such as a TV set, music, others talking, children playing, etc., this child has difficulty hearing and understanding.							
1) When paying attention	+1	0	-1	-2	-3	-4	-5
2) When being asked a question	+1	0	-1	-2	-3	-4	-5
3) When being given simple instructions	+1	0	-1	-2	-3	-4	-5
4) When being given complicated, multiple instructions	+1	0	-1	-2	-3	-4	-5
5) When not paying attention	+1	0	-1	-2	-3	-4	-5
6) When involved in other activities e.g. reading or coloring	+1	0	-1	-2	-3	-4	-5

7) When listening with a group of children	+1	0	-1	-2	-3	-4	-5
Listening Condition – QUIET							
If listening in a quiet room (others may be present, but are being quiet), this child has difficulty hearing and understanding.							
8) When paying attention	+1	0	-1	-2	-3	-4	-5
9) When being asked a question	+1	0	-1	-2	-3	-4	-5
10) When being given simple instructions	+1	0	-1	-2	-3	-4	-5
11) When being given complicated, multiple instructions	+1	0	-1	-2	-3	-4	-5
12) When not paying attention	+1	0	-1	-2	-3	-4	-5
13) When involved in other activities e.g. reading or coloring	+1	0	-1	-2	-3	-4	-5
14) When listening with a group of children	+1	0	-1	-2	-3	-4	-5
Listening Condition – IDEAL							
When listening in a quiet room, no distractions, face-to-face, and with good eye contact, this child has difficulty hearing and understanding.							
15) When being asked a question	+1	0	-1	-2	-3	-4	-5
16) When being given simple instructions	+1	0	-1	-2	-3	-4	-5
17) When being given complicated, multiple instructions	+1	0	-1	-2	-3	-4	-5
Listening Condition – MULTIPLE INPUTS							
When, in addition to listening, there is also some other form of input (visual, tactile etc.), this child has difficulty hearing and understanding.							
18) When listening and watching the speaker's face	+1	0	-1	-2	-3	-4	-5
19) When listening and reading material that is also being read out loud by another	+1	0	-1	-2	-3	-4	-5
20) When listening and watching someone provide an illustration such as a model, drawing, information on the chalkboard etc.	+1	0	-1	-2	-3	-4	-5
Listening Condition – AUDITORY MEMORY/SEQUENCING							
If required to recall spoken information, this child has difficulty.							
21) Immediately recalling information such as a word, word spelling, numbers etc.	+1	0	-1	-2	-3	-4	-5
22) Immediately recalling simple information	+1	0	-1	-2	-3	-4	-5
23) Immediately recalling multiple instructions	+1	0	-1	-2	-3	-4	-5
24) Not only recalling information, but also the order or sequence of the information	+1	0	-1	-2	-3	-4	-5
25) When delayed recollection (1 hour or more) of words, word spelling, numbers etc. is required	+1	0	-1	-2	-3	-4	-5
26) When delayed recollection (1 hour or more) of simple instructions is required	+1	0	-1	-2	-3	-4	-5

27) When delayed recollection (1 hour or more) of multiple instructions is required	+1	0	-1	-2	-3	-4	-5
28) When delayed recollection (24 hours or more) is required	+1	0	-1	-2	-3	-4	-5
Listening Condition – AUDITORY ATTENTION SPAN							
If extended periods of listening is required, this child has difficulty paying attention, that is being attentive to what is being said.							
29) When listening time is less than 5 minutes	+1	0	-1	-2	-3	-4	-5
30) When listening time is 5 to 10 minutes	+1	0	-1	-2	-3	-4	-5
31) When listening time is over 10 minutes	+1	0	-1	-2	-3	-4	-5
32) When listening in a quiet room	+1	0	-1	-2	-3	-4	-5
33) When listening in a noisy room	+1	0	-1	-2	-3	-4	-5
34) When listening first thing in the morning	+1	0	-1	-2	-3	-4	-5
35) When listening near the end of the day, before supper time	+1	0	-1	-2	-3	-4	-5
36) When listening in a room where there are also visual distractions	+1	0	-1	-2	-3	-4	-5

Source: "Use of CHAPPS in a children's audiology clinic" by W. Smoski, 1990, *Ear and Hearing, 11*(5 Suppl.), pp. 53S-56S. Copyright 1990 by Williams & Wilkins. Reprinted by permission.

Appendix F: Listening Comprehension Test 2

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

Directions: Listen carefully to these stories. Then I'll ask you some questions about them.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	A. Main Idea *Acceptable responses*	B. Details *Acceptable responses*	C. Reasoning *Acceptable responses*	D. Vocabulary *Acceptable responses*
	Demonstration Item: (The demonstration item may be repeated, altered, or explained to show the subject how to respond. No other instruction may be provided after the demonstration item.) Ray's friends came to his house. They brought gifts for Ray and played games. Ray blew out the candles on the cake.	What am I talking about? any reference to a birthday or party	Where was the party? any reference to Ray's house	What might Ray's friends have done to get ready for his party? any reference to an activity related to getting ready for a party	What is another word for *gift*? present
1 2 3 4	Next Tuesday we have our field trip. You will need to bring your lunch, some sunscreen, and your permission form. The bus will pick us up at 9:00 in back of the library.	1. What am I talking about? any reference to a field/class trip	2. When will the field trip be? either **one** of these: Tuesday, 9:00	3. How do you know the field trip will be outdoors? any reference to bringing sunscreen/sunblock	4. What does *permission form* mean? any reference to parental consent
5 6 7 8	The first year in a new land was hard for the Pilgrims. Many of them got sick. Their cell phones would not work. They had very little food. It was a tough life, but they were glad to be free.	5. What am I talking about? any reference to hardships, Pilgrims	6. Why was the first year a hard year for the Pilgrims? any reference to getting sick, having little food/supplies	7. What doesn't make sense about this story? any reference to cell phones	8. What is another word for *tough* in this sentence? *It was a tough life.* hard, harsh, rough, challenging, dangerous, difficult, complicated, grueling
9 10 11 12	I'm glad our class is sitting in the front rows. We will see everything. My sister has a big part. She gets to wear four costumes. She's been practicing for weeks. The curtain is going up!	9. What am I talking about? any reference to a play, performance, show, program, recital	10. Where is this student's class sitting? any reference to in front, near the stage	11. What do you think the sister did to practice her role? any reference to studied, memorized, repeated, rehearsed, read her lines/part/script, kept looking at it, going over it	12. What does *practicing* mean? any reference to rehearsing, doing something repeatedly, studying
A B C D E	Subtotals Page 1				

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	A. Main Idea *Acceptable responses*	B. Details *Acceptable responses*	C. Reasoning *Acceptable responses*	D. Vocabulary *Acceptable responses*
13 14 15	It is hard to spot baboons at night. They climb trees at night. That keeps them safe from leopards and lions. Then the baboons climb down in the morning.	13. What am I talking about? any reference to baboons, primates, apes, monkeys		14. Why don't baboons worry about lions or leopards during the day? any reference to lions or leopards being nocturnal	15. What is another word for *spot* in this sentence? *It is hard to spot baboons at night.* see, find, notice, locate, spy, recognize
16 17 18 19	Ian has soccer practice every day after school. Today is Tuesday. Ian has a doctor's appointment tomorrow after school.	16. What am I talking about? any reference to a schedule, plan, soccer practice, doctor's appointment	17. What day of the week will Ian miss soccer practice? either **one** of these: Wednesday, tomorrow	18. Why is a doctor's appointment more important than soccer practice? any reference to specific importance of doctor's appointment	19. What does *appointment* mean in this sentence? *Ian has a doctor's appointment tomorrow after school.* any reference to a meeting, date, scheduled/specific/certain time, visit with, time to see
20 21 22 23	The We Care Club is a club kids can join to help animals. Kids who donate money have their names on a big sign near the food court at the zoo. To find out how you can help, visit their website.	20. What am I talking about? any reference to a club, group	21. How can you find out how to help the We Care Club? any reference to website, Internet, online	22. Why does the zoo list the names of the kids who donate money? any reference to acknowledgement of participation	23. What is another word for *donate* in this sentence? *Kids who donate money have their names on a big sign near the food court at the zoo.* give, contribute, provide, offer
24 25 26	Please take out a pencil. Write your name at the top left of your paper. Number your paper from 1 to 15. I will say each word. Then I will use each word in a sentence. Listen to what I say. Then write the word on your paper.	24. What am I talking about? any reference to directions, instructions, test, quiz, spelling time	25. Where should the students write their names? must have **both** parts: top left	26. Why do teachers give tests? any reference to check what kids know/don't know	
A B C D E					
	Subtotals Page 2				

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	A. Main Idea *Acceptable responses*	B. Details *Acceptable responses*	C. Reasoning *Acceptable responses*	D. Vocabulary *Acceptable responses*
27 28 29	Sea horses are elusive. They hide themselves by changing color and ducking between rocks. Sea horses don't swim very quickly. Instead, they float in the water, often attached to each other by their tails.	27. What am I talking about? any reference to sea horses		28 Why would a sea horse need to hide? any reference to staying safe	29. What does *elusive* mean in this sentence? *Sea horses are elusive.* any reference to hard to find/get ahold of, mysterious
30 31 32 33	Attention, students! Last night the garden by our front door was ruined. The plants were cut and the flowers were pulled up. We need your assistance to find out who did this. We also need your help to raise money to buy new plants.	30. What am I talking about? any reference to damage to school, garden	31. What happened to the plants in the school garden? any reference to plants cut, flowers pulled up	32. How could the students raise money to replant the garden? any reference to a fund-raising activity	33. What is another word for *assistance* in this sentence? *We need your assistance to find out who did this.* help, aid, support
34 35 36	You know you have five external senses: hearing, touch, sight, smell, and taste. But did you know you have internal senses? These senses alert you to when you're tired, hungry, thirsty, or in pain. These internal senses are found in your muscles and nerves.	34. What am I talking about? any reference to internal/external senses	35. What are two things your internal senses tell you? any **two** of these: tired, hungry, thirsty, pain		36. What's another word for *alert* in this sentence? *These senses alert you to when you're tired, hungry, thirsty, or in pain.* warn, caution, signal, notify, tell, inform, prepare
37 38 39	Nurse sharks are the most sedentary of sharks. They lie quietly on the ocean bottom pumping water over their gills so they don't have to move much to keep warm. They eat crabs, shrimp, and lobster just like we do! They will not attack humans unless they are surprised or hurt by them.	37. What am I talking about? any reference to sharks	38. What do nurse sharks eat? any **two** of these: crabs, shrimp, lobster	39. What is one way a human could surprise a nurse shark? any reference to an aggressive movement/action	
A B C D E	Subtotals Page 3				

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	A. Main Idea *Acceptable responses*	B. Details *Acceptable responses*	C. Reasoning *Acceptable responses*	D. Vocabulary *Acceptable responses*
40 41 42 43	Many people are allergic to peanuts. How do they find out they are allergic? Many get a rash, also known as hives, and others have difficulty breathing. This type of allergy means you have to check the labels of most dry goods because many crackers, cereals, and noodles contain traces of peanut oil.	40. What am I talking about? any reference to allergies	41. How do allergic people react to peanuts? any reference to a rash, hives, difficulty breathing	42. How would you know if a baby had an allergy to peanuts? any reference to a rash, hives, difficulty breathing	43. What does the word *traces* mean in this sentence? *Many crackers, cereals, and noodles contain traces of peanut or peanut oil.* any reference to a small amount
44 45 46	Do you know where the expression "You smell like a skunk" is from? It comes from the spray a skunk spews out when it is threatened or frightened. A skunk can spray its target from a long way off, and the odor lingers on its victim for many days. However, a skunk will give its predator two warnings before spraying. It will stamp its feet and hiss.		44. Besides spraying its target, what other defense does a skunk use? either **one** of these: stamping its feet, hissing	45. Why do animals have defensive behaviors? any reference to protecting themselves	46. What does *predator* mean in this sentence? *A skunk will give its predator two warnings.* any reference to hunter, killer, attacker, destroyer, animal that eats another animal, an animal that's higher on the food chain, opposite of prey
47 48 49	The wind blew even harder. The grass was flat and our windows shook. We raced down into our basement and shut the door. We heard a howl like a train. Then it was quiet. Mom said it was safe to leave the basement. There was a lot of broken glass upstairs. Things were all out of place. At least we were safe. Our next-door neighbors weren't so lucky.		47. Where was a safe place for the family to go? any reference to the basement, cellar	48. Why would the basement be safer than upstairs? any reference to basement being underground	49. What is a *basement*? any reference to an underground room, cellar
A B C D E					
	Subtotals Page 4				

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

SCORE / SUBTEST	PASSAGE Allowable prompt: *What else can you tell me?*	A. Main Idea *Acceptable responses*	B. Details *Acceptable responses*	C. Reasoning *Acceptable responses*	D. Vocabulary *Acceptable responses*
A B C D E 50 51 52	The old lion was tired. He was too old to chase his food. He lay down in his den and pretended to be sick. Soon all the other beasts heard about the sick lion. One by one, they came to his den. And one by one, the lion devoured them. A sly fox watched the lion's den for a time. Then he stood out of the lion's reach and asked the lion, "How are you feeling?" "I am old and tired," said the lion. "Please come in and talk to me." "No thanks," said the fox. "Many tracks lead into your den, but no tracks come out."	50. What am I talking about? any reference to a lion, being tricked/deceived	51. What kind of tracks was the fox talking about? any reference to an animal		52. What is another word for *devoured* in this sentence? *And one by one, the lion devoured them.* ate (or any form of *eat*), consumed, gobbled, gulped
A B C D E 53 54 55 56	Did you know that some fish can breathe out of the water? The mudskipper can. A mudskipper doesn't have lungs. It breathes through its gills. The gills take oxygen out of the water to give the fish air. Before this fish leaves the water, it stores water in two sacs beside its gills. It can stay on land as long as it keeps the water in its sacs. This fish looks for small creatures in the mud. As the fish swallows, water squishes out of its sacs. Then it darts back into the water.	53. What am I talking about? any reference to fish, mudskipper	54. How is a mudskipper different from other fish? any reference to breathing out of water, looking for things to eat in the mud	55. Why does the mudskipper look for creatures in the mud? any reference to food, something to eat	56. What is another word for *darts* in this sentence? *Then it darts back into the water.* hops, jumps, leaps, runs, dashes, skips, hurries, scurries, scoots, sprints, whizzes, zips, charges, races, shoots, springs
A B C D E 57 58 59 60	Shadow is Dave's faithful companion. Some people say Dave and Shadow are best friends. When Dave is at school, Shadow waits patiently at home. Every afternoon, Shadow sits in the front yard, waiting for Dave's bus to drop him off. When Shadow was a puppy, she started following Dave everywhere. If Dave went to baseball practice, Shadow went too. When Dave rode his bike, Shadow ran alongside him.	57. What am I talking about? any reference to Shadow, Dave, a pet	58. Where did Shadow follow Dave? any reference to baseball practice, bike rides, everywhere	59. Why is Shadow a good name for Dave's dog? any reference to follows/always with him	60. What does the word *faithful* mean in this sentence? *Shadow is Dave's faithful companion.* loyal, true, devoted, trusty, trustworthy, dependable, can count on, won't leave/betray him, reliable, dedicated, committed, always there, by his side
A B C D E	**Subtotals Page 5**				

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

Directions: Listen carefully to these messages so you can answer questions about them.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	E. Understanding Messages *Acceptable responses*
61	Our bake sale to raise money is tomorrow afternoon. Please bring your cakes and cookies to Room 28 tomorrow morning.	61. What are you supposed to bring to Room 28 tomorrow? either **one** of these: cakes, cookies 62. Why are people bringing cakes and cookies to school tomorrow? any reference to a bake sale, fund-raising activity
62		
63	For math homework tonight, please do the problems on page 33. You only have to do the last ten problems because we already did the first ten in class today.	63. What is your math homework tonight? any reference to the last ten/remainder of the problems 64. Why don't you need to do all of the problems on the page? any reference to doing the first part in class
64		
65	Sunday afternoon, I want all of us to go over the schedule for the week. I need to know your game times so I know when to be at school to watch.	65. What are you supposed to do Sunday afternoon? any reference to going over the schedule/game times/plan for the week 66. Why do you need to go over the schedule for the week? any reference to knowing when to be at school/watch the games
66		
67	Parent conferences are next week, so school will dismiss 30 minutes early on Tuesday, Wednesday, and Thursday.	67. What days are parent conferences? must have **all** 3: Tuesday, Wednesday, Thursday 68. Why will students be dismissed early next week? any reference to parent/teacher conferences
68		
A B C D E	**Subtotals Page 6**	

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

SCORE / SUBTEST A B C D E	PASSAGE Allowable prompt: *What else can you tell me?*	E. Understanding Messages *Acceptable responses*
69	New computers are being installed Friday so they cannot be used when your class has library time.	69. What won't you be able to do when your class goes to the library? any reference to using computers 70. Why can't you use the computers on Friday? any reference to them being installed/fixed
70		
71	Tomorrow is the parade. The parade begins at 9:00 a.m. sharp. Be at the grocery store parking lot at 8:00 a.m. and find your group.	71. What are you supposed to do if you are in the parade? must have **both** parts: be there at 8:00 a.m., find your group 72. Why do you have to be at the parking lot by 8:00 a.m.? any reference to finding your group, being ready on time
72		
73	There's a flash flood warning in the Rosemont area this afternoon. Be ready to evacuate if necessary.	73. What are you supposed to do if you live in the Rosemont area? any reference to evacuating 74. Why are you supposed to be ready to evacuate? any reference to flooding, getting trapped, drowning
74		
75	There will be *no* swimming at the Miami beaches until further notice. Lifeguards spotted sharks close to shore.	75. What are swimmers supposed to do? any reference to staying out of the water 76. Why can't you swim at the Miami beaches? any reference to sharks
76		
A B C D E	**Subtotals Page 7**	

Source: "The Listening Comprehension Test 2™" by L. Bowers, R. Huisingh, and C. LoGuidice. Copyright 2006 PRO-ED, Inc.

Appendix G: Summarised data collection record form

Participant number:	
Participant group:	
Participant name:	
School and class:	
Examiner:	
Date:	
Date of birth:	
Chronological age:	

SUMMARY OF RESULTS				
HearScreenZA	**Digits in Noise**	**LCT-2**		**CHAPPS**
		RAW	AGE E	
		%	SS	
Pass / Refer	Pass / Refer	Pass / Refer		Pass / Refer

LISTENING COMPREHENSION TEST – 2 (LCT-2)

Subtest A			Subtest B			Subtest C			Subtest D		
#	Score	Answer	#	Score	Answer	#	Score	Answer	#	Score	Answer
1			2			3			4		
5			6			7			8		
9			10			11			12		
13						14			15		
16			17			18			19		
20			21			22			23		
24			25			26					
27						28			29		
30			31			32			33		
34			35						36		
37			38			39					
40			41			42			43		
			44			45			46		
			47			48			49		
50			51						52		
53			54			55			56		
57			58			59			60		
RAW	AGE E	%	SS	RAW	AGE E	%	SS	RAW	AGE E	%	SS	RAW	AGE E	%	SS

Subtest E					
#	Score	Answer	#	Score	Answer
61			62		
63			64		
65			66		
67			68		
69			70		
71			72		
73			74		
75			76		
RAW		AGE E	%		SS