

**STRATEGIES TO ADDRESS AUDITORY PERCEPTUAL DEFICITS IN  
A SCHOOL OF SKILLS IN THE NORTHERN SUBURBS OF CAPE  
TOWN**

by

**JACQUELINE ROSE JACOBS**

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**SUPERVISOR: MRS. N.D. MASEKO**

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## **DEDICATIONS**

I dedicate this work to the members of the Jacobs family especially the following:

Mr. I. Jacobs, my dad who always believes in me and supports me unconditionally. Thank you for your love and encouragement.

Mrs. J. Jacobs (my late mother)

My sisters, brothers-in-law, nieces and cousins.

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The Principal, HODs, Educators of the School of Skills and learners who dedicated their time to assist me to conduct this study. God be with you and bless you!

## DECLARATION

Student Number: 4595-235-3

I, **Jacqueline Rose Jacobs**, declare that the thesis, **Strategies to address auditory perceptual deficits in a School of Skills in the Northern Suburbs of Cape Town**, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

.....  
Jacobs J.R (Miss)

Date

## **ABSTRACT**

The aim of this action research was to investigate how auditory perceptual deficits affect reading in learners with disabilities. The sub-questions were: What auditory perceptual deficits learners' experience? How do educators assist learners with auditory perceptual deficits? What instructional strategies and classroom management can educators apply to assist learners with auditory perceptual skills? The data collections comprised of an informal oral assessment, observation and anecdotal notes with fifteen participants with barriers to learning, from the English first year class, within a special needs educational setting. Data analysis and validity were supported by triangulation through informal assessment, observation, my critical friend and my own critical reflection. The support of phonologic, memory, and cohesion skills, auditory skills were the reading educational construct and strategies used as intervention in order to identify the efficacy of said interventions. Both bottom-up and top-down support strategies were used in relation to the participants' individualised educational needs. The research results and discussion included methods to improve reading and listening skills in the classroom environment.

Key words: auditory perceptual deficits, central auditory processing disorders, special schools, school of skills, mild intelligence disability, moderate intelligence disability, barriers to learning

## ABBREVIATIONS AND ACRONYMS

AAA:	American Academy of Audiology
ACAPS:	Adapted Curriculum and Assessment Policy Statement
APD:	Auditory Perceptual Deficits
ASA:	Auditory Scene Analysis
ASHA:	American Speech-Language Hearing Association
BSA:	British Society of Audiology
CANS:	Central Auditory Nervous System
CAP:	Central Auditory Processing
CAPD:	Central Auditory Processing Disorder
CISG:	Canadian Inter-Organizational Steering Group
CNS:	Central Nervous System
FM:	Frequency Modulation
HPCSA:	Health Professional Council of South Africa
IEP:	Individual Education Plan
IQ:	Intelligence quotient
LDA:	Learning Disability Association of America
MID:	Mild Intellectual Disability
NCESS:	National Committee on Education Support Services
NCSNET:	National Commission on Special Needs in Education and Training
RD:	Reading Disorders
SA:	South African
SAAA:	South African Association of Audiology
SANASE:	South African National Association for Specialised Education
SASLHA:	South African Speech, Language and Hearing Association
SBST:	School-Based Support Team
SGB:	School Governing Body
SIAS:	National Strategies on Screening, Identification, Assessment and Support
SID:	Severely Intellectually Disabled
SLT:	Speech Language Therapists
SoS:	School of Skills
SMT:	Senior Management Team
SPD:	Sensory Processing Disorder
WCED:	Western Cape Education Department

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# CHAPTER 1

## BACKGROUND AND ORIENTATION OF THE STUDY

### 1.1 INTRODUCTION

An auditory perceptual processing disorder is also called auditory perceptual problem, central auditory dysfunction or central auditory processing disorder (CAPD) central deafness, and so called “word deafness”. (Sensory Processing Disorders Australia 2014) I refer to it as Auditory Perceptual Deficits throughout my research.

Auditory memory is the capability to receive information that is offered verbally (vocally), assimilates it, retain it in the brain, and then remember it (Loraine & Johnson, 2011). Auditory memory shortfalls comprise recollecting multi-task instructions; speaking about recent information and relating to previous understanding, verbal conception, making notes while listening, following spoken interpretation, written phrasing, and verbal phrasing (Loraine & Johnson, 2011). Essentially, it is the skills of attending, listening, processing, storing and recalling. Learners with auditory memory difficulties hear only parts of what is being said during classroom lessons, and, they do not comprehend what is said by the educator. Later they are able to remember only a small amount or nothing of what is said, according to A to Z of Brain, Mind and Learning (2014b).

As an educator, in a Special School in the Northern Suburbs of Cape Town, my experience is that it takes quite a few shouts to get learners’ attention, even though they seem receptive to, mechanical sounds like vacuum cleaners, and electric school bells. According to Greenspan (2014), learners with auditory perceptual deficits have trouble modulating sounds; they block out some frequencies and overstress others. For learners like this, a cat’s meow may appear like a lion’s roar. This sort of divergence does not show up on typical hearing tests because the reverberation is passing through the learner’s ear and into the brain. The problem is in the way learner experiences and how they respond to it.

A to Z of Brain, Mind and Learning (2014a) says that in a classroom setting learners show the following characteristics which are found in children with Auditory Perceptual Deficits: (i) they may seem to pay no attention to verbal directions; (ii) may appear to be inattentive; (iii) ask for repetitions of guidance or says “what” or “huh?” often; (iv) watch everybody to see what they are doing before completing a task; (v) may have poor speech patterns; (vi) may be monosyllabic or may not volunteer information; (vii) may tend to gesticulate a lot; and (viii) usually prefer visual tasks.

In support, Patrusky (2013) says that educators notice that learners with Central Auditory Processing Disorders (CAPD) on the other hand demonstrate the following behaviours: (i) have trouble following more than one trend at a time, (ii) usually say “huh?” or “what?” and require information to be repeated, (iii) poor recollection words and figures, (iv) trouble with difficult language such as word problems or a long story, (v) trouble in expressing intricate speech, and (iv) have trouble with reading, comprehension, spelling, and vocabulary connected tasks. According to Ross-Swain (2007), to be taught, a child must be able to pay attention to, listen to, and distinguish significant speech from all of the other noises at school and home. When auditory skills are ineffective, the child may experience an excess of information.

Rosenberg, Westling and McLeskey (2008) claimed that learners who are diagnosed with mild intellectual disabilities delays behind their grade-level peer group in their progress academic skills. Thus, learners with mild intellectual disabilities are likely to be considerably deferred in learning to read and learning basic math skills. This deficit in improving introductory skills in reading and math, joined with the deficit in language skills, then results in deficit in other academic fields require the use of these skills (for example, writing, spelling, science). Having said this, however, certain impairments may put a stop to the learner from participating in continuous controlled learning and progress. Such impairments may not provide the learner to take part in a perfect method of learning. The academic field in which language deficit have the most damaging effect is reading. While learners, with mild intellectual disabilities and who are weak readers, share a deficiency in phonological language skills, which other learners with afflictions, for example, learners with barriers to learning (Rosenberg, Westling & McLeskey, 2008), may also display, learners with intellectual disabilities are also often drastically deficit in common oral language skills. Thus, even if learners with mild intellectual disabilities develop the ability to read individual words and strategies for reading comprehension, they will have trouble comprehending what they have read because of weak verbal skills in areas such as vocabulary. Therefore, educators need to present these learners with teaching that concentrates on their phonological weakness as well as a wide variety of language skills, for example, vocabulary development (Rosenberg, Westling & McLeskey, 2008).

Some learners also encounter learning failure as a result of intrinsic cognitive or barriers to learning in sections such as in acquiring skills in literacy or numeracy or in the planning or running of their own learning (Department of Education, 1997). Systemic barriers to learning are barriers generated by the education system itself. Most frequently in South Africa, learners with disabilities put up with the most relentless consequences of a passable, under

resourced education system. Some of these systemic barriers in South African framework which impact on learners and children with disabilities include: overcrowding in classrooms; long hindrances in assessment of learners; long waiting lists at special schools; a shortage of funds for assistive devices; insufficient facilities for learners with disabilities in schools, for example, physical access for learners with wheelchairs (Aziz, McKenzie, Watermeyer, Beere, Japtha, Fish, Khumalo and Swift, 2016). We are adapting our curriculum at school and work according to the learners' needs. We use some of these helpful classroom strategies for learners with auditory perceptual deficits: to get learners' attention before giving directions; privileged places arrangement, purposeful instruction; preview and review consistently; flexible time; and the organisation of the classroom (Spivey, 2012a).

My school is situated in the Northern Suburbs of Cape Town, South Africa. It is a special public school (school of skills) for learners with mild intellectual disabilities. The learners' ages range from fourteen to eighteen years. Presently there are two hundred learners, fifteen educators, one behavioural counsellor (who has to teach life orientation as well), one learning support educator (visits school two days a week), one administrator, two cleaning personnel, and one lady who is in charge of preparing food for the learners, which falls under the auspices of the Peninsula School Feeding Association.

The school program runs from 08:15 am to 14:00 pm from Monday to Friday. Most classes consist of twenty learners and one educator. The skills department has eight different workshops (woodwork; needlework; hospitality studies; hairdressing; welding; upholstery and office management) and the academic programme offers six subjects (home language - Afrikaans and/or English; life orientation; mathematics; natural sciences; technology and arts and crafts). Apart from the scholastic program, learners also take part in athletics and soccer.

Our school is situated near an industrial area with environmental noise (for example, aeroplanes flying over school, trucks and, traffic) has an influence the auditory perceptual skills of participants. Classes are not soundproof and the noises from our school's skills department have a negative influence on the participants' auditory perceptual skills. The school building has an upper and lower level with corridors, when learners move around, it is very noisy. Educators must often stop teaching until the noise level drops in order to continue with a lesson or may have to repeat themselves.

Learners with mild intellectual abilities need the necessary support to flourish and can attain a high level of success in many different facets. At my school we follow an Adapted National

Curriculum and Assessment Policy Statement (ACAPS). The national curriculum and teaching are carefully customised to assist learners to reach their full potential in both scholastic and the different skills needed in the different workshops we have at our school. Most of our learners are delayed in their reading or basic math skills or in both. For learners with moderate and severe intellectual disability or those who find it hard to accomplish the National Senior Certificate or Grade 9, the curriculum should be modified to highlight transition-to-work components. Schools are expected, in all cases to assist learners to expand their capabilities so that they ultimately have the chance to work in the open industrial market or become economically and socially self-sufficient in the instance where they will be functioning in caring or secluded service (Department of Social Development, 2009).

The school is governed by a School Governing Body (SGB), which is composed of nine members, made up as follows: the principal, two educators, one non-teaching staff, four parents and one co-opted member. The SGB organises fundraisers and, draws up a budget each year to decide on the school fees to be paid by the parents. The SGB must: make decisions on an admission procedure for the school; make decisions on the language procedure of the school; make decisions on what spiritual customs will be followed at the school; and agree to a code of conduct for learners', which sets out penalties for non-compliance.

There is also a Senior Management Team (SMT) made up of the Principal, Deputy Principal and two Heads of Departments. Decisions are generally made by this committee or by the principal himself, with input from the rest of the staff.

The Western Cape Education Department (WCED) proposes the following guidelines to bring about uniformity in the referral and placement of learners at Schools of Skills. The admission criteria are as follows: a learner referred to a School of Skills should experience mild to moderate cognitive barriers to learning which result in poor scholastic progress and should demonstrate an aptitude for skills training; the learner's scholastic functioning should be at least two years below the grade level of his/her age cohort; the learner may have spent more time in either or both Foundation or Intermediate Phase (Grades 1 - 6); learners should not manifest serious behavioural problems as their primary barrier to learning; learners who are Severely Intellectually Disabled (SID) should not be referred to a School of Skills; the learner should be fourteen years of age at the start of Year 1 and turn eighteen in Year 4; learners should not be placed directly into Year 2 due to the structure of the program; although learners who tend a Special School will be given preference, a new application

form must be completed when applying to a school of skills; and documented evidence of intervention/support/assessments, for example, by learning support educators or psychologists, must be included in the application.

## **1.2 PROBLEM STATEMENT**

At my school, after an informal oral assessment of auditory perceptual deficits, for learners with learning disabilities and intellectual impairments, I identified that the learners needed to become active, skilled listeners to improve or overcome their auditory perceptual deficits as well as their reading problems. These following manifestations of auditory perceptual deficits were observed. Learners find it very difficult to follow oral instructions. They experience difficulties in reading, spelling, and writing skills. Poor listening skills, language skills, problem solving skills, and auditory association skills are the major areas in which they experience problems. Currently, no intervention program exists at our school for improving learners' auditory perceptual skills.

According to Kruger (2006), different professionals working with learners with auditory perceptual deficits, language afflictions, learning problems and sensory integration dysfunction have a tendency to look at these disorders from dissimilar viewpoints. As a result, the intervention is often based on the insight of the particular professional. There is a call for a representation that can combine approaches and schools of thought in the identification, intervention strategies to support learners, between the age of fourteen and eighteen, with auditory perceptual deficits. I, however, will look at the auditory perceptual deficits from an educator's perspective.

## **1.3 MOTIVATION FOR THE STUDY**

Eight years ago I started teaching as a special school educator at a school of skills. In the years that I taught at the school, I noticed that learners found it difficult to hear in background noise.

As an educator there were simple things that I did, to help the learner who is having trouble with auditory perception. I gave participants extra practice with fun-filled, exciting and meaningful sequencing information, manipulation of sounds as well as animating my voice, by changing the rhythm, frequency, and the tone. I experimented with the tempo, rate of recurrence, and tone of my voice. Whilst various learners prefer an unhurried and lower register, others react more to a high one. Greenspan (2014) warns against the diverse rate of recurrence levels of sound, where learners are oversensitive to high or low-frequency sounds. An educator's work is to shield them from becoming shaken.

Multi-modal tasks are very problematic for them, for example, dictation and visual and auditory integration. They are distracted/ inattentive, fidgety and restless (also symptoms of Attention Deficit Hyperactive Disorder). They have poor memory and often ask for things to be repeated. They misunderstand intent rather than content of communication – misinterpret messages. They experience extreme difficulty in comprehending sarcasm or subtle changes in intonation.

I argue that teaching learners' the phonologic, memory and cohesion skills, would improve their reading, listening and their ability to cope with different learning subjects as learners could. Use various learning, listening and problem-solving strategies to improve their auditory perceptual deficits.

#### **1.4 RESEARCH QUESTION**

The focus of this study was condensed in the following question:

- How does auditory perceptual deficit affect reading in learners with learning disabilities?

The following sub-questions also guide this study:

- What auditory perceptual deficits learners experience?
- How can educators assist learners with auditory perceptual deficits?

#### **1.5 AIM AND OBJECTIVES OF THE STUDY**

The purpose of this research is to explore the way in which auditory perceptual deficits affect learners' reading with the ultimate aim of suggesting strategies to address auditory perceptual deficits in learners with reading difficulties.

The objectives are:

- To understand what auditory perceptual deficits are;
- To explore ways in which educators can assist learners with auditory perceptual deficits;

#### **1.6 RESEARCH APPROACH AND METHODOLOGY**

In order to explain how auditory perceptual deficits affect learning in a school of skills, I used action research as my research methodology. Mills (2010) defines action research as any organised investigation conducted by educator researchers, principals, school counsellors, or other stakeholders in the teaching/education situation collect data about how their specific



school works; how they educate; and how well their learners learn. This information is gathered with the goals of gaining perceptions, developing contemplative operation, implementing constructive changes in the school situation, and enhancing learner outcomes and the lives of those concerned.

Johnson and Christensen (2012) are of the opinion that action research is an ordinary method used for improving situations and the operation in classrooms and other practice-based settings.

I used a mixed method approach, with a blend of qualitative and quantitative research methods. Klein (2012) states that various action research questions call for statistical data collection and analysis to explain and understand behaviours and settings. Tomal, cited in Klein (2012), states that the combination and approval of both normative and qualitative research methods within action research today allows researchers to put forward more variations for investigations into “learner-centred,” educator-classroom,” “school-centred, “instructional development”, and community-based matters. Craig (2009) mentions that action research that use qualitative methods usually involve a number of media and approaches appropriate for when doing research in the practitioner-based setting.

This study’s action research cycle consists of four phases:

- Phase one: Informal oral assessment of auditory perceptual skills at my school. A literature review will be done in order to discover the auditory perceptual skills.
- Phase two: Reflection of participants’ performance during phase one.
- Phase three: Intervention session which addresses the auditory perceptual deficits.
- Phase four: Observation. In order to ascertain that the intervention is effective from an educator’s point of view, I will involve the class educator as a critical observer (with the permission of the participants).

### **1.6.1 Data Collection Methods**

The research data was collected through four methods namely, informal oral assessment, observation, anecdotal notes and reflection.

#### **1.6.1.1 Informal Oral Assessment**

I used informal auditory perceptual assessments to determine the auditory perceptual deficits participants’ experienced. The informal assessment would give numerical information on how participants were performing and the areas they were struggling with. Pre- and post-

assessments were done orally to determine how participants improved after the intervention. Improvement was demonstrated, in a line graph, after I studied the informal oral assessment results.

#### 1.6.1.2 Observation

According to Klein (2012), observations can give important and appropriate data that can be used to make more instant pedagogical exchanges and improvements. Observation is an effective research method for educator-researchers in any discipline and context. I observed the participants' behaviour during listening activities: were they distracted; play with objects on their desks; did they attend to the educator when he/she gave instructions. Action research that includes observation is a sensible and useful approach to detect and recognise pedagogical practice with a specific centre of attention and with an action plan that is specific to findings. Both kinds of observations were used. Anecdotal notes were taken throughout the informal oral assessments and intervention sessions.

#### 1.6.1.3 Anecdotal Notes

Anecdotal notes (field notes) are the information is analysed to portray an appreciation of the research setting and participants; they should be as thorough, understandable, and in depth as possible. Gay, Mills and Airasian (2011) claim that such information captures the researcher's individual responses to observations, the researcher's experiences, and the researcher's views during the observation meetings. In this study, the anecdotal notes were not used as a data collection method separately, but while assessing and observing participants, notes were taken. I wrote down the behaviour of participants which I observed during the informal oral assessment and intervention session, and this helped me with my reflection as well as my observation of participants.

#### 1.6.1.4 Reflections

Craig (2009) refers to reflection – as related to teaching and learning – as a process through which practice may be examined in order to effect change and improvement. Reflecting on teaching and learning allows an educator to examine practice in order to determine what techniques, strategies, or methods are working effectively; what techniques, strategies, or methods need examination; what changes are needed, what changes are critical, and what plan of action needs to be implemented in order to improve practice. I reflected on the auditory perceptual deficits participants struggled with and what I, as an educator-researcher, could do to minimise the effects of auditory perceptual deficits.

## **1.7 ETHICAL ISSUES**

According to McNiff and Whitehead (2011), moral attentiveness involves three aspects: compromising and assuring entry; safeguarding participants; and ensuring confidentiality. This means taking care of privacy, making sure entry and withdrawal from the research if participants so wish, and obtaining consent from all stakeholders.

I asked permission from my principal and the Western Cape Education Department to carry out my study at my school. The principal as well as the Western Cape Education Department responded positively to my request.

The following were required:

- Obtaining of informed assent from participants – making certain the research participants gain access into the research freely and with the accepting of the essence of the research. Permission was given by the parents and guardians of participants who are not of legal age. The participants also gave their permission by signing an assent form which was in a language appropriate to their developmental level.
- Ensuring them freedom from harm – participants were not exposed to undue risks.
- Protection and best interest of participants are of prime importance during the research. They could stop taking part in the research if they felt uncomfortable.
- The use of anonymity to ensure confidentiality – identities of participants will be kept hidden by using of pseudonyms.

## **1.8 VALIDITY AND RELIABILITY**

According to McNiff and Whitehead (2010), validity in action research involves several processes, which also involve other people in different ways, and works at the levels of:

- My own confirmation, to do with assessing the soundness of the understanding maintain opposed to one's own espoused principles. I have reflected on my own principles and assessed my classroom operations in the light of those principles. I am now surer about my own potential, especially in the teaching of auditory perceptual skills, the affirmative influence of believing in my own ability to progress the value of my life, and I think I have conveyed this reassurance to the participants.
- Societal confirmation, to do with assessing the soundness of the claims against the crucial response of others. My critical friend gave comments on the progress of the participants in her class.

- Public legitimation, which is an ongoing aspect social validation. This was achieved by discussion with my colleagues about auditory perceptual strategies.

I also used triangulation, a strategy within internal validity in action research. Triangulation of data provides validity about the results of what was studied. Triangulation is crucial in action research in order to adhere to a qualitative methodology (Craig 2009). I triangulated the informal oral assessment, observations, anecdotal notes and class work books to reinforce the validity and trustworthiness of my qualitative research.

I correlated the informal oral assessment performance data with the observation notes on the behaviour of participants during the assessment and intervention sessions. Triangulation took place within all three methods of data collection.

## **1.9 CONCEPT CLARIFICATION**

For the purpose of this study, the following meanings will apply to the key concepts to be used in this study.

Auditory perception – this simply means hearing. When you perceive a sound, your brain has to understand it to make sense of it. Auditory perception fits under the wider umbrella of Central Auditory Processing Skills (CAPS) (Berke, 2011).

Auditory processing disorders – is how the central nervous system (CNS) uses auditory information. However, the CNS is huge and also is in charge of functions such as remembrance, concentration, and language, among others. To evade puzzling auditory processing disorders that can affect a person's capacity to focus, comprehend, and retain information, it is imperative to stress that an auditory processing disorder is an auditory deficit that is not the consequence of other higher-order cognitive, language, or associated disorders (Bellis, 2015).

Auditory discrimination – is the skill to differentiate between dissimilar sounds and words (Lorraine, 2010).

Auditory sequential processing – is the method of putting actions, information and things in a rational sequence (Spivey, 2008). It is also the skill to name the succession of sound (Lindfield Speech Pathology, 2010). Sequencing refers to learners' skills to put proceedings in succession (Johnson & Daymut, 2010).

Auditory memory – is the skill to accumulate and remember auditory information (Johnson, 2014).

Auditory attention – is the skill to “tune in” to auditory contribution. Auditory attention is the skill to look at the centre of attention on particular sounds and process them to take put significance (Innovative Therapies, 2016).

Auditory figure-ground processing –is the skill to listen to and process an auditory stimulus in the attendance of surroundings sounds (Hearing Education, Assessment and Related Services, 2016).

Special Schools (SSs) - a school capable in conveying education to learners requiring high-intensive educational and other support both on a permanent or part-time foundation (DoE, 2014).

A School of Skills (SoS) – was formerly known in the Western Cape as a School of Industry that became a School of Skills in 1999 (Department of Social Development, 2012). According to the South African National Association for Specialised Education, a school of skills is also referred to as a special school, which caters for intellectually mildly disabled learners (Eksteen, 2009).

Barriers to learning – refers to problems that occur within the education system as a whole, the learning place and/or inside the learner him/herself which avoid access to learning and development for learners (Department of Basic Education, 2010).

## **1.10 STRUCTURE OF THE DOCUMENT**

The study is presented in five chapters, briefly discussed below:

Chapter 1 has provided the backdrop, underlying principle for the research, research aims, and research designs.

Chapter 2 is a literature review, presenting what other researchers have explored on the topic both locally and internationally.

Chapter 3 focuses on research methodology and techniques used to respond to the research question. It clarifies the selection of the action research mode and the research design and site selection. Questions of ethics, validity, reliability and reflexivity are also dealt with.

Chapter 4 presents the data collected from the field with brief interpretations to contextualise the study and focus on answering the research question.

Chapter 5 provides the conclusion of the research. The interpretations of the study, limitations, critical reflection, and recommendations are made in this chapter.

## **1.11 CHAPTER SUMMARY**

The content of this chapter has been to orientate the reader to the research problem and as well as to the context in which it is founded. The research question was posed and aims of the research outlined. The research plans and methods were briefly described, and key concepts clarified.

The next chapter reviews the local and international literature on the identification of learners who experience auditory perceptual deficits.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

In this section I outline the context that informs the type of learners and school in which I work. The review of interrelated literature entails the systematic recognition, and analysis of information connected to the research problem. The literature review provides an in-depth overview of current research on the defined problem (Gay, Mills & Airasian, 2011). This chapter reviews the latest literature on the challenges learners face with auditory perceptual deficits, and develop the theoretical framework that underpins this study.

#### **2.2 MILD TO MODERATE INTELLECTUALLY CHALLENGED LEARNERS**

Intellectual disability is categorised by considerable restrictions in intellectual performance (way of thinking, learning, problem solving) and adjustable actions, covering a variety of everyday societal and practical skills. This impairment emerges before the age of 18 (SA Federation for Mental Health, 2013). “Intellectual disability” forms a division of “developmental disability,” but the limitations are often distorted as many persons fall into both categories to contradictory degrees and for dissimilar reasons (Ndopu, 2014, p.3).

Individuals who have an intellectual disability are likely to have trouble with scholastic learning, and their reading and writing may be at a fundamental stage. A number of individuals may not have had the educational support they required to be taught to read or write, and they may be uncomfortable about this. It is imperative to be sensitive when asking individuals to read information or to fill in written documents; and find the subtlety of interpersonal associations and societal regulations complicated to comprehend completely. They therefore sometimes perform uncomfortably or improperly in societal circumstances (Better Health Channel, 2015).

Only learners who experience mild to moderate cognitive barriers to learning are at my school. Thus learners have an IQ range of 50 to 70 (Holland, 2011). Although about 85 percent of individuals with intellectual abilities are found this grouping, many are able to achieve scholastic success. An individual who can read, but has trouble understanding what he or she reads is typical of a person with mild intellectual disability.

Learners with mild intellectual disability will normally be able to: partake in and give to their family and their community; have significant connections in their existence and may marry

and raise children with the support of family, friends and support services; live and travel alone, but may need support in handling money and preparing for and managing their everyday lives; take up an occupation (either with or without some level of support); and learn to read and write, with suitable educational support.

Learners who have a moderate range IQ of 35 to 49 may, have reasonable communication abilities, but cannot usually converse on difficult topics. They may have trouble in societal circumstances and trouble with societal signals and conclusion. These individuals can care for themselves, but might require more lessons and support than the usual individual. Many can live in autonomous circumstances, but some still require the support of a group residence. About 10% of those with intellectual disabilities fall into this group (Gluck, 2015).

Learners with a moderate intellectual disability will usually: have significant associations in their lives and will most likely form important and lifelong friendships; take pleasure in a variety of activities with their relatives, and social circle; be proficient and can be taught to take a trip on normal public transportation roads with exact instruction, but will have trouble preparation excursions and managing cash. They may have trouble problem-solving when unforeseen events transpire; learn to identify some words in perspective, such as ordinary symbols including 'Ladies', 'Gents' and 'Exit'; be proficient to make choices and be aware of every day programmes or upcoming dealings, if presented with visual prompts such as every day schedules and photos of intended occasions; require permanent support in scheduling and arranging their living and actions; and cope with individual concerns, such as toilet cleanliness, dressing and bathing. The degree to which this occurs will depend on chances to become skilled at and run through these errands, and whether or not the individual has other disabilities, such as cerebral palsy (Better Health Channel, 2015).

The Texas Council for Developmental Disabilities (2013) mentioned that learners categorised as mildly intellectually disabled display setbacks in cognitive, societal, and adaptive conduct abilities within usual classroom situations. Often when they are in dissimilar situations, these same people function pretty proficiently both in a social context and occupationally. In their grown-up lives, they can be self-sufficient and finely-attuned to the world outside of school situation. It is only in the background of educational requirements and demanding intellectual confrontations that their capabilities appear damaged.

### **2.3 CONCEPTUALISATION OF BARRIERS TO LEARNING**

Learners at my school have different barriers to learning that are influenced by different factors in the context of South Africa. In our school the following factors have a huge impact



on impacting on learners learning: socio-economic barriers; lack of available places at essential facilities; poverty and underdevelopment; things which put learners at danger such as gangsterism, mind-sets, language and communication; and may lack acknowledgment and association with close relatives. The National Committee on Education Support Services (NCESS) & National Commission on Special Needs in Education and Training (NCSNET) (DoE, 1997) stated that learners' with 'special needs' needed support and/or specifically structured learning programmes. These learners may have been presented with a separate, occasionally insufficient system of education, or they may have been barred from the system or they may have experienced a learning collapse. Inadequate educational provision for learners with 'special needs' led not only to a shortage of essential abilities and information but has also added to a system that was incapable of understanding and meeting the varied needs of its learners to avoid obstructions to learning and development (DoE, 1997). These obstructions to learning, such as auditory perceptual problems or deficits (APD), are an additional part that educators of South Africa need to consider (Khan, 2006).

From an educational perspective it will be more effective to follow the top-down as well as the bottom-up approach. The American Speech-Language-Hearing Association (2012) recommends that all interventions be based on a top-down as well as bottom-up approach.

## **2.4 THEORETICAL FRAMEWORK**

Of late the Gestalt theory has been applied to the auditory perception. Bregman, a Gestalt psychologist (1990) explained similar occurrence in visualisation: sensory parts close to one another are perceptually clustered into groups. The detached elevated and short successions in the flowing occurrence can be implicit in the auditory accounts of such groups. He theorised that perceptual clustering was competitive.

Bregman (1990) mentioned that even if the majority action research on auditory scene analysis (ASA) had been done on easy instances of clustering in the laboratory, generally auditory scene analysis researchers think that other equally significant issues have an effect on the perceptual group of sounds in the usual surroundings.

Bregman (1990) stated that there are mutually old ("bottom-up") and information-based ("top-down") kinds of auditory scene analysis. Old processes, the issue of most auditory scene analysis research depends on signals offered by the aural composition of the sensory contribution. The old processes focus on the constancy in how noises are created in practically all ordinary surroundings. Top-down proponents, again, are individual concerned mindful awareness, who support the idea of precedent occurrences with definite noises.

The bottom-up theory is a learner-centred approach focal point on signal quality and environmental adjustments. This could inform educators how to physically alter the classroom environment in order to positively affect learning.

The top-down approach is educator-centred and focuses on language and cognition. According to Friel-Patti (1999), speech-language pathologists support the top-down approach, ordinary described as the system model. Friel-Patti (1999) stated that the system model “lays emphasis on the allocated character of information procedures within the nervous system... the incorporation of sound, signification, and meaning entails more than the auditory neural pathway”(p.347). This approach permits educators to utilise diverse language approaches in the classroom.

I based my research on both top-down and bottom-up support/intervention approaches. In the top-down approach, I looked at cognitive and meta-strategies, language strategies and classroom strategies. In the bottom-up approach, I used auditory training and environmental modifications as part of the interventions sessions.

Chang, et al. (2007) argued that the Gestalt principles supply a helpful structure to classify multi-sensory exhibit rules. According Chang, Nesbitt and Wilkins (2007), the Gestalt theory was initially explained in 1910, by Köhler in 1920; Wertheimer in 1924, and Koffa in 1935. Cutting (1989) stated that Wertheimer was interested in the relationship between the sensory elements of an experience and the whole experience. Originally, this theory was only studied in psychology, but the notions have underpinned many research studies, such as picture recovery, optical plans, chart sketches, melodious studies, and the development to auditory aids.

The Gestalt theory, initially explained in 1910, tried to describe the manner by which individuals distinguish and identify prototypes. The early studies of Gestalt principles of category were primarily interested in visual perception, although of late they have been used in research on auditory perception (Chang, Nesbitt & Wilkins, 2007).

“Gestalt” is a German word and its significance can more or less be decoded into English as ‘form, shape, or pattern’. Each distinctive perceptual component has its distinctive character and features, but the character in distinctive characters on its own cannot explain how a collection of fundamentals will be detected. The important indication of Gestalt theory is that the perception of the complete outline (or gestalt) cannot be described from the summation of its components. Gestalt information was a response to reductionist approaches of the

period. One disadvantage of Gestalt theory is that it only gives a descriptive device and cannot be used to foresee the conclusion of the plan (Chang et al., 2007).

According to Chang, et al. (2007), the presumption is one of the better-known perceptual assumptions for perceptual group. It tries to clarify how individuals systematise particular components into clusters and how individuals observe and distinguish designs. Calvert, Spence and Stein (2004) stated that the creation of multi-sensory exhibits is difficult, as it is essential to carefully think about the perceptual abilities of individuals. They posited that it is essential to assemble as much help as feasible for designers of multi-purpose exhibits. Although low-level rules are helpful for designers, they consider that a higher-level structure should be described to composition these rules. Well-structured guidelines can provide designers with both context and detail. This equates well with top-down (high-level) and bottom-up (low-level) approach.

## **2.5 AUDITORY PERCEPTUAL DEFICITS**

The Listen and Learn Centre (2015) defines Auditory Processing Disorder (APD) as the incapability to process the significance of sound. This problem often exists from early infancy, revealing itself in a number of ways as the young person becomes older and communication become difficult.

The Listen and Learn Centre (2015) stated that auditory perceptual deficits are a difficulty in the auditory decoding of language, which very often lead to a decline in performance as a consequence of defective expressive and receptive communication.

According to the Canadian Academy of Audiology (2014), the expression auditory perceptual deficits issued to explain what occurs when brain distinguishes and deduces the sounds in the environment.

The Canadian Academy of Audiology (2014) defined it as the trouble in taking note of or understanding auditory information, in particular when favourable listening circumstances are comprised by (background noise). Plainly put, it is a circumstance in which an individual does not process speech/language correctly. Learners with auditory perceptual deficits possibly will have problems distinguishing where sound comes from and recognising the cause of the sound or in differentiating one sound from another. For example, “bear” may sound like “pear”, or “care” may sound like “mare”. They Academy, furthermore, stated that people often have trouble conversing and studying due to defective processing of auditory information. Auditory perceptual deficits in the developing of auditory input may be

intensified in inauspicious audio surroundings and are correlated with trouble in listening, speech, comprehending and language development and learning. In their Position Statement on auditory perceptual deficits, the British Society of Audiology (BSA, 2011) defines auditory perceptual deficits as follows: auditory perceptual deficits are characterised by weak perception of both speech and speech sounds. Auditory 'perception' is the awareness of audio stimuli, outlining the foundation for consequent actions. Consequences of defective perceptions from both sensory commencement (via the ear) and neural processing impede 'bottom-up' information in other brain system (for example vision, attention, memory). Problems in distinguishing and comprehending speech sounds could occur from other reasons (for example, language impairment, non-native experience of a particular language), weak perception of speech on its own is inadequate confirmation of auditory perceptual deficits. Auditory perceptual deficits have their source in damaged neural nodes. The instruments essential to auditory perceptual deficits incorporate both afferent and efferent paths in the auditory system, as well as higher intensity practicing that supply 'top-down' intonation of such paths.

### **2.5.1 Identification of learners with auditory perceptual deficits**

Learners with APD often struggle academically, withdraw into themselves, and refuse to participate, or respond inappropriately, in class discussions. According to Nunziato (2012), memory skills such as recalling the alphabet, counting, and labelling the days of the week and months of the year are often affected in this population. APD typically manifest in attending, reading, spelling, musical/singing ability, and following complex verbal directions or commands. Symptoms commonly associated with APD overlap with characteristics observed in other sensory and cognitive deficits (for example, attention deficit hyperactivity disorder, dyslexia, autism spectrum disorder, learning disabled and specific language impairment).

The National Institute on Deafness and other Communication Disorders (2015) is of the opinion that learners with APD regularly do not identify slight diversities among sounds in words, yet although the sounds itself are loud and clear. For example, the demand "Tell me how a couch and a chair are alike" may sound to a learner with APD like "Tell me how a cow and a hair are alike." These problems are compounded when an individual with APD is in boisterous surroundings or when he or she is listening to difficult information (Canadian Academy of Audiology, 2014).

The Listen and Learn Centre (2015) claim that learners with APD could show several or every one of the next symptoms: tardy language development; incapability to listen

efficiently; difficulty in the succession of the sounds of words; trouble recognizing high frequency sounds: 't', 'f', 's', 'k', 'p', 'th', 'sh'; puzzlement when come upon comparable sounds: for example, 'da' and 'ba'; reduced understanding in a boisterous surroundings; effortlessly side-tracked by unrelated environment sounds; deprived speech comprehension, frequently requesting 'What?'; misapprehension and meagre memory for verbal communication; incoherent answers to similar auditory stimuli; incapability to pursue instructions and trouble carrying out more than one instruction at a time; trouble in conveying wishes, frequently putting the blame on other individuals for not comprehending; deprived phonemic awareness causing weak reading, spelling or comprehension; low scholastic performance; and behaviour trouble.

In contrast, numerous recent studies have established that various learners with APD show these same symptoms even in hushed or minimal noise environments (Ferguson, Hall, Riley & Moore, 2011). The British Society of Audiology (2011) mentioned that there are also further studies on APD that report that there is no association between results on auditory processing assignments and normalised assessments of scholastic accomplishment. Due to the lack of consensus reported above it is important for professionals to focus on the core symptoms showing aspects of auditory perception which contribute to the clinical presentation of a child with listening difficulties (Lewis, 2014).

The Canadian Academy of Audiology (2014) reported that symptoms do not change as the learner matures. Young children, primary school-age learners, teenagers, and grown-ups are likely to show comparable signs.

Johnson (2014) mentioned that professionals of the same mind that learner with APD often work out disputes by compromising and therefore, auditory often avoiding detection. As a result, APD can present permanent problems if it is not identified and treated. Abilities that are normally harmfully influenced include: Communication - learners with APD may possibly not talk audibly. They may well let go of the last parts of words and syllables that aren't accentuated. They might confuse comparable sounds (free instead of three) long after their fellow classmates have learned to right themselves.

Academics - learners with APD regularly have difficulty initial reading, spelling and writing abilities. Learning vowels and build up phonemic consciousness - the assembling blocks for reading - can be particularly hard. Comprehending verbal teachings is demanding. Learners with APD are likely to respond better in classes that do not depend much on listening.

Social skills - learners with auditory perceptual deficits have problem telling tales or funny stories. They may well shy away from discussions with classmates because it is difficult for them to process what is being verbalised or to offer a suitable reply.

## **2.6 AUDITORY PERCEPTUAL DEFICITS IN SOUTH AFRICA**

The number of children being diagnosed with APD is increasing. According to Khan's (2006) personal observations of the SA context, speech-language therapists and audiologists are receiving a greater number of referrals for an auditory perceptual deficit assessment. However, the lack of standardised assessment and management across speech-language therapists (SLT) in South Africa, as well as the lack of general consensus in defining and managing this disorder globally, leaves open the possibility of adverse effects on a child's education, self-esteem and future (Musiek & Chermak, 2007). According to Lewis (2014), due to the lack of consensus in defining and implementing protocols in South Africa, assessment and management of children with APD is not being optimised.

Lewis (2014) mentioned that auditory perceptual deficits are applied interchangeably with central auditory purpose, central auditory perception, auditory verbal communication processing and auditory verbal communication studying. CAPD has been referred to as APD since the year 2000. This change was due to a group of fourteen senior scientists and clinicians headed by Jerger and Musiek (2000), resolving to keep the definition operational to avoid the attribution of APD to an anatomical location. Hence, they deemed it appropriate to refer to the disorder as a CAPD as it is broadly associated with progression of data that is particular to the auditory modality.

Lewis (2014) mentioned that in South Africa it was found that in an information booklet listing audiologists in South Africa in private practice, compiled by the South African Association of Audiologists (SAAA, 2009), only 33 audiologists, out of approximately 150 members listed, provide services for APD. The inadequate research available in South Africa regarding APD only adds to the uncertainty of South African Speech and Language Therapists and audiologists when faced with their patients, which leads to ethical dilemmas in terms of beneficence and non-maleficence regarding one's treatment of the patient.

South African Speech, Language and Hearing Association's (SASLHA) moral code clearly states that "associates of the vocations of Speech-Language Therapy shall take action reliably concerning their in ongoing progress specialised growth and uphold proficiency in their discipline of training" (SASLHA, 2010, p.3). It is evident from the above research that assessment and management services for APD in South Africa are not readily available. The

fact that so few audiologists offer assessment and management services for APD possibly suggests that few audiologists feel sufficiently competent to offer services in this field. Therefore, if many audiologists feel inadequately prepared to offer services, it is possible that SLTs in the South African background feel the same way, leading to lack of confidence to administer APD therapies (Lewis, 2014). In an attempt to develop an understanding of the field of auditory perceptual deficits locally, the Health Professional Council of South Africa (HPCSA) recognised the need and established a task force in 1999. The primary aim was to oversee the initial stages of formal research and development in the field of APD in South Africa. Although there is ample research being undertaken internationally on the topic of APD, in terms of assessment practices, management guidelines, diagnosis and consequences in school performance, the outcomes are not easily generalised to the South African context, due to the following challenges, as outlined by the HPCSA in 2001: the lack of standardised South African APD test materials in the country; the poor quality of available recordings to be used in an assessment; the presence of different recordings of the same test; the challenge of 11 official languages, making English resources and assessment tools ineffective; poor training of the administration and interpretation of APD tests and their results; uncertainty about which APD tests to use, due to the lack of standardised assessment protocols and practices; and uncertainty about which intervention procedures to use following the diagnosis (Lewis, 2014).

No recent information is available to show if anything changed since 2001.

Lewis (2014) said that South African Speech-Language Therapists (SLTs) also need to consider the numerous context related challenges when working within the field of APD. SLTs are not equipped with sufficient knowledge on APD management and assessment for children within the South African context.

Musiek and Chermak (2007) pointed out that the need for APD intervention is increasing as auditory perceptual deficits statistics in 2007, showed that in South Africa, (population 44.8 million) approximately 30,000-50,000 children may exhibit APD in Grade One alone. No more recent statistics are available.

Lewis (2014) mentioned that the lack of South African research as well as a corresponding lack of reliable statistics proves to be problematic in reviewing the interventions for learners with APD. This forces a reliance on international studies that may not speak as effectively to our context as a developing nation. This explains the dominant use of international research.

## **2.7 INTERNATIONAL VIEWS AND CONTEXT ON AUDITORY PERCEPTUAL DEFICITS**

Esplin and Wright (2014) reported that there is a generally shortage of global and countrywide agreement on dealing with APD such as how to identify, provides suitable interventions and how to accomplish optimal results for learners with APD. Generally, there is a need for realistic comprehension of APD by educators in New Zealand schools.

The American Speech-Language-Hearing Association (2016) reported that further investigation is required in auditory processing and its variations. There is a serious call for the expansion of assessment of auditory processing to minimise the concerns regarding multimodality and supra-modality. Equally, there is a call to develop more proficient checking equipment to recognise persons in danger of CAPD, in addition to checking and analytic assessments suitable for multicultural/multilingual peoples. Performance analytic assessments must be expanded that are founded on psychophysical ethics, that link up with suitable psychometric paradigms, that have been correlated to recognise abnormal functioning of the Central Auditory Nervous System (CANS), and that can be made accessible throughout industrial settings for training clinicians. The function of physiologic assessment, together with neuro-imaging measures, in the analytic procedure must be scrutinised more, as must the matter of degree of difference analytic criteria for CAPD. Amid routine central auditory analytic and higher order language, learning, or communication continuation assessments, associations need to be look for in an organised approach to determine arrange for groupings. Nevertheless, because of the complication of auditory and corresponding confusions, fundamental association methods may be insufficient for this undertaking. In its place, research of these associations will need to include the variety of both, CAPD and learning, language, or related disorders by using suitably grouped topic clusters based on numerical methods, such as group breakdown, differentiated role, and factorial analysis. Investigation is also required into treatment efficiency to improve the collection of deficit-particular remedial methods and to consider recommendations in terms of regularity, seriousness, and extent of management programs.

The British Society of Audiology (2011) mentioned that a major deficiency in current studies, identifying and promoting support for auditory processing disorders is the need of a 'gold standard': a mutually-agreed assessment against which the understanding and particularity of other assessments can be benchmarked. Several current assessments methods persist in the narrative (for example, dichotic listening, tone frequency discrimination, filtered words). Presentation assessments other than recognition or discrimination entrances (for example,



regularity of comebacks) should also be considered as these can shed light on central processing. However, none of these assessments draw near to the 'gold standard' that is needed. Case-control research studies usually use proven analysis as the basic principle for auditory processing disorders, but this develops into repetition if there is no agreed scientific analytic paradigm. Given the range of difficulty, one way forward is to ask why learners were originally designated as APD. Carefully researched parent/caregiver assessments have presented important and insightful checking devices in other improvement disorders (for example, Connors Rating Scales for attention deficit disorder, Children's Communication Checklist for specific language impairment). The development of such a tool for listening problems might also show the way to a gold standard. A surveyor various other applicable assessments could be used during an interim phase of investigation to authenticate straight assessments, both behavioural and physiological.

According to the Canadian Inter-Organisational Steering Group for Speech-Language Pathology and Audiology (2012) historically, the function of the assessment series was the classification of location of auditory system anomalies. While analytic procedures such as magnetic resonance imaging (MRI) have mainly restored this purpose, use of the auditory processing assessment series is a helpful and significant component of audiology training and can be used for several significant purposes. Measurement end results can assist in inventing and assessing straight support treatments and the employ of supportive tools; distinguishing auditory maturation from additional lasting auditory disorder in learners; and in diagnosing auditory neuron flexibility or corrosion. Audiologists may even engage in recreation a function in avoidance of auditory processing disorder. If growing noise disclosure has the potential to intensify neural deterioration without change in hearing recognition, assessments of auditory processing could be important in avoidance of later trouble. The CISG proposed that the complexities, of managing interventions in listening, language processing and communicating in the multifaceted listening surroundings of toddlers, children, grown-ups and seniors each day, only be dealt with in an interdisciplinary structure which encompasses hearing and cognitive investigation. The auditory processing assessment series should be regard as an instrument to identify auditory capabilities and inabilities of persons presenting trouble with listening and communication, and should be the foundation of an inclusive and comprehensive diagnosis, rather than only being an instrument alongside the auditory scheme.

## **2.8 AUDITORY PERCEPTUAL DEFICITS – A CAUSE OF READING DISORDERS (RD)**

The Listen and Learn Centre (2010) stated that APD results in the incapability or diminished capacity to differentiate, to distinguish or comprehend auditory information. It is distinguished by incompetent auditory processing capabilities which can be the reason for shortfalls in phonological awareness. Reading Rockets (2015) furthermore maintained that a shortfall in phonological awareness is considered to be the most important explanation of why many learners encounter difficulties in reading. Because APD results in weak verbal communication perception and defective phonological demonstrations, it could be theorised that auditory perceptual deficits are the underlying cause of learner's reading disorder.

Our capacity to identify, comprehend and differentiate auditory information is undoubtedly related to our listening, understanding and learning ability. When the auditory skills required for competent auditory processing are weakened, auditory indicators are distorted in the auditory cortex and are consequently not precisely processed by the brain (Thomas & Mack, 2010). Imperfect phonological depictions, lead to poor phonological awareness. It is this phonological awareness that is a basic skill for reading (Thomas & Mack, 2010). Research by Sharma, Purdy and Kelly (2009) has established that the majority of persons with reading disorders also have auditory processing disorders which become evident in the aberrant processing of auditory information. It is this auditory processing deficit that is considered to be the basis of reduced sound, resulting in the defective paraphrasing of written wording to phonological signs. Proficient and precise phonological interpretations are necessary for reading achievement. If these are incorrect and damaged as a consequence of an auditory processing skills deficit, phonological awareness will be negatively influenced causing reading problems or disorder (Thomas & Mack, 2010). The current narrative substantiates the strong associations among auditory processing disorders, deficits in phonological awareness and reading problems (Listen & Learn Centre, 2010).

## **2.9 SUPPORT OF AUDITORY PERCEPTUAL DEFICITS**

There is more than one method of assisting learners with auditory perceptual deficits. Johnson (2014) and Day (2013) mentioned that these can consist of: accommodations (such as adaptations in timing, arrangements, surroundings or management of tasks); modifications (changing tasks to reduce the field of limitations); or remediation (educating and therapy to build abilities).

Esplin and Wright (2014) said that we have to remember that learners with auditory perceptual deficits are not all the same and that successful strategies and tools may vary significantly for each learner. Customising therapy to meet the learners' profile and practical shortfalls usually entails a mixture of bottom-up and top-down approaches. In the auditory teaching, the managing of auditory circumstances and indicators joined with educational, cognitive, language, meta-cognitive, and meta-linguistic approaches can assist in diminishing auditory deficits and lead to more successful listening, communication, and learning.

According to Esplin and Wright (2014), since the assessment of learners who have learning or communication problems, have formerly based on behavioural and standard recommendations, it is hard to supply an exact analysis for this grouping. Normally learners with APD do not present the same results across dissimilar assessments, demonstrating shortfalls in various areas only. One means of scientifically evaluating the validity of APD assessment is to make sure that learners are capable of completing all the assignments; while they may exceed some of the measurements, they may fall outside the norms of results on other assessments.

Esplin and Wright (2014) were of the opinion that there is no proof that auditory deficits are fundamentally connected to language disorders, but they do happen in relationship with them. Musiek and Chermack (2007) added that although it may not be the major reason of learning or reading problems, auditory processing ought not to be ignored as a small but imperative function of listening and learning. There are strong signs that language and listening abilities in learners could be improved by auditory learning, but there is still a lack of knowledge about how this occurs.

Banai and Yifat (2010) state that intervention for APD entail continuous rectification (auditory training and improvement of reimbursement approaches) as well as adjustment of surroundings (improving a person's access to auditory information offered in settings such as classroom, work and other communicative settings).

Richert (2015) said that there are various simple tests to provide feedback on learners' problems. He mentioned that every learner's requirements are unique and rely on their skilfulness and their aptitudes; although the following approaches may be among the most successful: privileged seats— ensuring that the learner is sitting in the front of the classroom; restrict environmental noise, for example by using of ear plugs; offering instructions in small pieces, using visual indications if possible; repeating in a different way what has already

been described in uncomplicated language; accommodating the learner’s response, giving them an opportunity to process the information; requesting the learner to repeat what has been said noiselessly to themselves or to you; training the learner in note-taking skills or assisting them to develop their own method; sustaining structure and habit so instructions can be recalled more easily; writing instructions on a white board; allocating a partner or buddy to the learner; using multi-media presentations; and keeping away from the long verbal teaching sessions that cause an auditory burden.

## 2.10 APPROACHES USED TO ADDRESS AUDITORY PERCEPTUAL DEFICITS

HearBuilder (2009) and Loraine (2010) determined numerous skills involved in auditory processing – or listening achievement. They can generally be grouped under four steps, but all work jointly and are necessary for every day listening.

Table 2.1 Four steps in auditory processing

Steps	Sub-segments	Explanation
Auditory awareness	auditory awareness	the capacity to distinguish sound
	sound location	the capacity to establish the sound source
	auditory attention/ auditory figure-ground	the capacity to concentrate on essential auditory information in the middle of challenging environmental noise
Auditory discrimination	auditory discrimination of surrounding sounds	the capacity to notice dissimilarities among sounds in the surroundings
	auditory discrimination of supra-segmental sounds	the capacity to notice diversity in non-phoneme facets of speech consisting of tempo, concentration, length, modulation, and in general prosody
	auditory discrimination of segmental sounds	the capacity to notice diversities amid verbal communication sounds
Auditory identification	auditory identification/ auditory association	the ability to attach meaning to sounds and speech
	auditory feedback/ self-monitoring	the ability to change speech production based on information you get from hearing yourself speak
	phonological awareness/ auditory analysis	the ability to identify, blend, segment, and manipulate oral language structure

Auditory comprehension	auditory comprehension	the capacity to comprehend extended auditory communications, including slot in discussions, following instructions, and comprehending narratives
	auditory closure	the capacity to make logic of auditory communications when a part of auditory information is not there; fill in voids
	auditory memory	the capacity to maintain auditory information both right away and following impediment
	linguistic auditory processing	the capacity to understand, maintain, categorise, and influence verbal language for higher intensity education and communication

(Source: HearBuilder, 2009; Loraine, 2010)

Although there is no agreement on the precise ranking of abilities, researchers usually have the same opinion on what abilities are necessary for auditory processing accomplishments.

According to Moats and Tolman (2009), basic phonological skills are word attentiveness, receptiveness to assonance and alliteration, syllable attentiveness, beginning assonance and controlling, and phoneme attentiveness. In addition, they mentioned that fundamental listening abilities and word understanding are essential to forerunners to phonological awareness, which is significant for obtaining phonological skills. The British Society of Audiology (2011) stated that phonological awareness is the attentiveness of the fundamental sound compositions of vocal language, and the capability to manoeuvre these sound compositions. According to Spivey (2012b), phonological awareness is a comprehending of perceiving sound and controlling of sounds in words. Phonological awareness comprises the potential to distinguish sound and produce assonances (**fat**, **bat**, **mat**, **sat**), utter phrases with sounds left out (**fat** without **f** is **at**), and put two word portions as one to build a word (**fl** + **at** = **flat**). On the whole frequently, learners having trouble with phonological awareness have problems learning to read. Phonological awareness is one of the ultimate actions in practising learners for specific reading teaching.

According to Patrusky (2013), auditory abilities are essential to the language education processes, successful listening abilities are needed for academic accomplishment. In the scholastic surroundings, learner must constantly concentrate to understand, accumulate, and recover auditory information while at the same time scrutinising their own

comprehension of the point being made. The fundamental phonological abilities are significant for learners who are proficient in reading. The memorisation capacities are necessary to process information. Auditory cohesion needs not only comprehension, but also the capacity to use suggestions, assimilate information and generalise in order to understand the implication of orally offered information.

## **2.11 CHAPTER SUMMARY**

In this chapter the background to the research was provided that provided a picture of the type of school in which I work. The significant role of interventions in auditory perceptual deficits and the effects they have on reading was explained.

The next chapter provides an outline of the research design and method of inquiry used.

## **CHAPTER 3**

### **RESEARCH DESIGN**

#### **3.1 INTRODUCTION**

This chapter outlines the study plan that was used to answer the research question: How does auditory perceptual deficit (APD) affect reading in learners with learning disabilities? The sub-questions are: What auditory perceptual deficits do learners experience? How can educators assist learners with auditory perceptual deficits? What instructional strategies can educators apply to assist learners with auditory perceptual skills?

#### **3.2 PURPOSE OF THE RESEARCH**

The rationale for this research is to explore the way in which auditory perceptual deficits affect learners' reading with the ultimate aim of suggesting strategies to address auditory perceptual deficits in learners with reading difficulties.

#### **3.3 RESEARCH METHODOLOGY**

The word methodology describes the plan whereby the researcher decides on data collection and analysis methods to explore a particular research problem (McMillan & Schumacher, 2010). According to Savin-Baden and Howell Major (2013), methodology is a notional analysis of the processes and ethics suitable to a field of investigation or other division of information. Some researchers, however, have used the term methodology as a substitute for the term research approach. Some have used it as a substitute for the term methods. Methods (what they are actually planning to do during the study, such as methods of data collection) are defined as the specific actions or procedures taken during a study (Savin-Baden & Howell Major, 2013).

I have chosen action research as my research methodology. I followed the mixed research paradigm because I selected data from both quantitative and qualitative research (McMillan, et. al., 2010). I used the informal oral assessment and the pre/post observational checklist in line of the data collection and data analysis methods for the quantitative research. For the qualitative research, I used observation and anecdotal notes.

Gay, Mills and Airasian (2011) defined action research in education as any organised investigation carried out by educators, principals, school counsellors, or other stakeholders

in the education-learning environment that entails collecting data about habits in which their schools function, the teachers instruct, and the learners learn.

Sagor (2011) defined action research as a restrained procedure of investigation carried out by and for those requiring the information. The main cause for employing action research is to support the “actor” in developing and/or improving his or her actions.

The methodologies of action research signify that individual persons entail into their own preparations in an organised and accurate approach, so they can demonstrate how they hold themselves responsible for what they are accomplishing (McNiff & Whitehead, 2010).

### **3.3.1 Characteristics of action research**

McNiff and Whitehead (2010) suggest the following as major features of action research are that it: is preparation based, and preparation is implicit as action and research; is regarding recuperating preparation (both action and research), generating awareness, and creating existing assumptions of preparation; focus the centre of attention learning, not on improving behaviours; highlights the significance of support in preparation; is about making enquiries and establishing awareness, and is more than just qualified preparation; is working together with others, and paying attention to the co-construction of awareness of preparations; engages examination, deconstruction and decentring; stress higher-order inquiring; is purposely opinionated; call for individuals to hold themselves responsible for what they are undertaking and acknowledge accountability for their own behaviour; and can add to communal and educational alteration.

The process of conducting action research is an iterative, cyclical one in which theories of action are examined or tested and further evaluated until the desired outcome or goal is achieved (McMillan & Schumacher, 2010).





Figure 3.1 Action research cycle

(Source: McMillan & Schumacher, 2010, p.450)

Savin-Baden and Howell Major (2013) were of the opinion that there are many advantages to using action research. Perhaps the most evident is the way in which it helps those working to manage and implement the change processes to work closely together. This means there is focus on ensuring that all voices are heard and communication is maximised. In particular, the advantages are that:

- Research is undertaken with an issue at its heart, which helps to ensure that is relevant to those involved and connected to issues and concerns in daily life, such as how educators might improve relationships with parents in the school playground.
- It can improve communication between not only the researchers and participants but also those who are affected by the change process on a broader scale; for example, in a university change may affects both lecturing staff and students as well as catering staff and administrators.

I had discussion with my colleagues on using different strategies to improve their learners' auditory perceptual skills, as well as listening skills. It helped learners to communicate with different staff at school, to listen attentively when spoken to, and follow the instruction or directions given to them.

- It can help researchers and practitioners change and develop through the process; for example, often, through action research, those involved learn about themselves and their colleagues.

It helped me to be more open to change, trying out new strategies, activities, and games in improving the auditory perceptual skills of participants and learners at our school. The research showed me my strength and weaknesses and which of my colleagues are open to change.

- It can promote collegiality and sharing practices amongst practitioners who may not usually work together or understand each other's work. For example, nurses and physiotherapists working together to change referral practices will come to know each other's work and practices better.

I had discussions with the learning support educator on what strategies I applied during my auditory perceptual lessons, what participants enjoyed the most, what worked, and on the improving of listening and language skills. We had discussions after different assessment on the areas improvement is needed.

- It encourages participants and researches to reflect on their own practice as well as enabling them to compare and reflect on how they practice compared with others (Savin-Baden & Howell Major, 2013).

Quite a few limitations and criticisms have been raised such as: it is too dominating and dictatorial, searching for ways to confine and control action research within a specific form; it challenges the importance of the individual educator-as-researcher in goodwill of self-critical societies; and it is complacently accepting and internal inconsistency (Cohen, Manion and Morrison, 2011; Savin-Baden & Howell Major, 2013). I found it difficult to decide which form of action research I have to choose.

I reflected on how I could improve my teaching of auditory perceptual deficits; how I could implement it in my daily lessons to improve language and listening skills in my classroom; and shared it with my colleagues; and what changes I could make to improve the overall performance of learners in my class.

### **3.4 PARTICIPANTS**

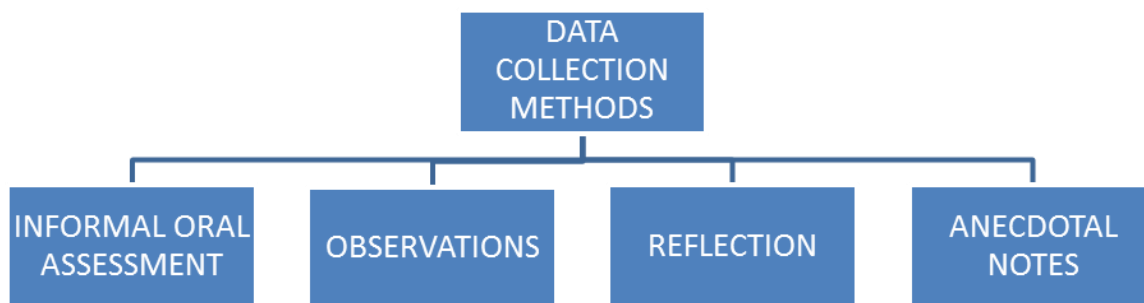
Fifteen participants with barriers to learning were randomly chosen from the English first year group (Babbie, 2007). The fifteen participants in this research included eight boys and seven girls. The educator- learner ratio is one to fifteen at a school of skills. I also looked at the participants' school attendance. During the time of the research we had only one English group. I used them for my focus group (Menter, Elliot, Hulme, Lewin and Lowden, 2011; Hendricks, 2013). According to our admission policy, learners enter the school of skills at the age of fourteen or the year they turned fourteen and they exit the school in their fourth year or when they turn eighteen years old.

The ethnic representation at our school is 4,34% White, 93,24 % Coloureds, 0,97 % Blacks and 1,45 % Congolese.

My position as an educator researcher is to attempt to overpass the breach among codified research information and daily 'expertise' information of educators which. So my researching exercise about auditory perceptual deficits are about demanding viewpoints and principles through coming across fresh data from other educators and codified information, so that able-bodied enlightened judgement can be made in classrooms which at last enhance the interests and accomplishments of each learner in each class (Wilson, 2013). I will also change positions as an inactive observer to an active observer in my observations (Cohen, et al., 2011).

### **3.5 DATA COLLECTION METHOD**

McMillan and Schumacher (2010) refer to the level of similarity among the definitions of the occurrence of APD. In the research, I gathered multiple perspectives on the issue from the relevant group that had a stake in the problem. Multi-method strategies of data collection (observation, informal oral assessments, anecdotal notes and reflection) were used in the research. The extended information gathering stage presented occasions for ongoing information evaluation and to improve suggestions to guarantee the outcome of the study. As the educator/researcher I had to work on the learners' cognitive level and take their learning disabilities in consideration. I kept an attendance record of the participant during the research.



Fig

ure 3.2 Data collection methods

### 3.5.1 Informal oral assessments

To collect data as part of this study, I used informal oral assessments to determine the participants auditory functioning. The reason why I used an informal oral assessment was to discover the participants' ability to process auditory information, and how they comprehend the things they heard. An educational evaluation of the participants' auditory perceptual abilities was made (Johnson and Christensen, 2012). The assessment was done for the intention of an auditory perceptual intervention programme.

The assessment consisted of three sub-assessments: basic phonemic abilities (word discrimination; phonological segmentation, phonological blending); auditory memory (number memory forward, number memory reversed, word memory, sentence memory) and auditory cohesion (auditory comprehension, auditory reasoning).

The participants were individually assessed over a period of one month. A pre-assessment was conducted to indicate the particular auditory perceptual deficits participants experienced. The pre-assessment session lasted approximately ninety minutes per participant. After the intervention program I assessed the participants again to see if there was an improvement in the auditory perceptual deficits they experienced. The post-assessment lasted approximately ninety minutes per participant. This took place in the month of May 2015. The assessment consisted of auditory perceptual skills which were imperative to the improvement, utilisation, and perceptiveness of the language used in scholastic lessons.

The assessment scores of the pre- and post- assessment were written on the record form under the following headings; phonologic, memory and cohesion. From there the information of the participants' performances was analysed. Data were categorised according to the above themes and categories. Graphs enabled me to see at a glance what is happening, and to analyse the action.

### **3.5.2 Observation of participants**

Savin-Baden and Howell Major (2013) provided some specific details, suggesting that the observer may wish to focus on several points: physical setting, participants, activities, interactions, information delivery, 'subtle factors'.

Fifteen participants, with barriers to learning, in an English first year class were observed. They were fourteen years old. These participants' behaviours were observed before I started with the intervention programme as well as after the programme. An observation schedule was drafted to assist with the observations of the participants' behaviour in class during lessons as well as observations of the participants' behaviour during the assessments and intervention program were made; for example, what do they do during listening activities, are they distracted by noise, do they ask me to repeat words, do they use the word huh/ what?, and how quickly do they respond? I used an auditory processing/phonological awareness checklist for classroom educators, and a pre/ post observational checklist of participants (rating scale: 0 = never; 1 – occasionally; 2 – sometimes; 3 – often; 4 – usually; 5 – nearly all/ all the time). The checklist will show the participants performance before and after the intervention sessions (Sagor, 2011). I incorporated this information into the results. Within the context of a school and assessments it is the norm to use numerical data for intervention purposes.

I observed the participants' behaviour and performance of the informal assessment, intervention sessions and during lessons. It gave me an indication of the auditory perceptual deficits the participants experienced. I alternated my teaching strategies, and environmental changes were done as the needs arise, for example, closing of door or windows when it becomes too noisy.

### **3.5.3 Anecdotal notes**

Field notes are a form of direct observation that can easily transfer into anecdotal notes. The solution to putting together anecdotal notes is to rapidly document any surveillance accurately, such as occurrences or behaviours or attitudes that are significant to the study (Tomal, 2010). These are the memo's the researcher puts together in the field, being explored (McNiff & Whitehead, 2010).

Field notes document sentiments and feelings, create enquiries and document the effort in development (Wilson, 2013). It is frequently very useful and this tool is becoming more accepted. It is implemented to provide a proof of what occurs, of why and where the researcher's suggestions developed and of the research process. It is a place where the

researcher would maintain an explanation of his reflections and write down individual observations on his judgments as well as the start of his understandings (Koshy, 2010; Cohen et. al., 2011).

Koshy (2010) mentioned the advantages of keeping field notes help to individualise a research assignment. This is essential in an action research task as the most important reason is to make modifications in practice. Dairies and field notes assist to remain a development verify on the assignment. Field dairies often complement information acquired from other resources. The course of introspective writing is an essential component of the researcher's specialised progress.

According to Koshy (2010), the following aspects are worth considering when thinking about the disadvantages of research dairies and field notes: a researcher may be enticed to write down a great deal, which can create problems at the moment of examination. It is difficult to maintain the habit of writing frequently. When the research is not going according to plan, there may be an inclination to discontinue writing. Individualising occurrences may introduce researcher bias.

I used a free writing style when keeping my notes (Stringer, 2008). I wrote down participants' reactions during the assessment and intervention program. I made notes in the margin of the assessment of the participants' behaviour, for example were they nervous, did the participant take long to respond, were they tired during the assessment, distracted, playing with their fingers? During the intervention session I jotted down how they worked with their fellow participants, whether they asked me to repeat things, were they talking/ daydreaming when they were supposed to listen, what sounds were confusing, did they follow the directions, were they distracted by environmental noise. My notes were kept short and to the point. As it was action research, little time was available to write too much.

I used the captured information, which was written down in anecdotal form. It contained information of the date, time, and behaviour of participants as well as the environmental settings in order to reflect on these later. I underlined the behaviour that occurred most of the time, and formed the themes, categories and codes. The captured information was used to perform an analysis after the data collection.

### **3.6 INTERVENTION**

According to the American Academy of Audiology (2012), support should be provided for persons of all ages as soon as a (Central) Auditory Processing Disorder diagnoses is made. For learners and adults believed to be "at-risk" for (Central) Auditory Processing Disorder but

for whom a specific identification has not yet been made, supplemented auditory encouragement and auditory “games” (for example, musical chairs, Simon Says) and/or software that exercises auditory sound recognition in noise or phoneme discrimination, should be started and can engage relatives and educationalists. Successful intervention should be practical and consistent with neuroscience and learning ideologies.

These ideologies specify (i) thorough teaching to take advantage of flexibility and cortical reorganisation (i.e., extensive exercise and major confront by working near the person’s ability verge; (ii) broad (multidisciplinary) essential reserves teaching to utilise large auditory contribution, and be related auditory, cognitive, meta-cognitive, and language systems, and take full advantage of simplification and efficiency; and (iii) dynamic partaking, combined with relevant corroboration and response to encourage and get the most out of learning (American Academy of Audiology, 2012).

Over a period of four weeks I had sessions with fifteen participants, eight boys and seven girls. One of the participants dropped out of the research due to absenteeism. The participants attended the sessions for thirty minutes every day. Every day meetings were made up of six exercises, each carrying on for between five minutes and thirty minutes. Materials used, Love to listen, a remedial exercise to develop listening skills (discrimination – cat sat, analysis – for example, He bites (2 parts), synthesis – m/o/p = mop, memory – for example, 4 - 1 - 7 repeat in sequence, manipulation of sounds/phonemes – weekend say without end = week), and verbal reasoning skills (odd one out – same came scale flame).The rest of the day they attended academic and technical classes. Underlying cognitive, language, and auditory skills were part of the intervention sessions.

My planned intervention to address participants’ auditory perceptual deficits included the following compensatory strategies: exercises focussed on building the different auditory perceptual skills necessary for improving their reading skills, teaching them efficient skills and strategies for solving different auditory perceptual skills, and introducing games (Simon says) participants played while improving their auditory perceptual skills.

The only environmental changes I made were to put up curtains to block out some of the surrounding noise as well as closing the windows and doors when it became too noisy. I used different exercises (discrimination, sequencing, and verbal reasoning) from books to improve the different areas of the auditory perceptual skills. Different listening, language exercises and games formed part of the intervention sessions.

The following table indicates the participants who underwent the intervention sessions:

Table 3.1 Participant schedules

NR	LEARNER	GENDER	AGE	PRE-ASSESSMENT	POST ASSESSMENT
1.	Randy	Male	14 years	02 Feb 2015	07 May 2015
2.	Michael	Male	14 years	03 Feb 2015	12 May 2015
3.	Naeema	Female	14 years	06 Feb 2015	11 May 2015
4.	Gary	Male	15 years	13 Feb 2015	19 May 2015
5.	Nazeem	Male	14 years	12 Feb 2015	15 May 2015
6.	John	Male	14 years	25 Feb 2015	13 May 2015
7.	Joan	Female	14 years	23 Feb 2015	30 May 2015
8.	Sarah	Female	14 years	20 Feb 2015	05 May 2015
9.	Rowena	Female	14 years	18 Feb 2015	08 May 2015
10.	Case	Male	14 years	16 Feb 2015	29 May 2015
11.	Jack	Male	14 years	10 Feb 2015	04 May 2015
12.	Nina	Female	14 years	11 Feb 2015	06 May 2015
13.	Anna	Female	14 years	04 Feb 2015	18May 2015
14.	Rave	Male	14 years	09 Feb 2015	14 May 2015
15.	Anthea	Female	14 years	17 Feb 2015	Drop out

### 3.7 REFLECTION

According to Koshy (2010), reflexivity is the method in which the researcher reflects on his worth, prejudices, individual surroundings and circumstances in the decisiveness of his elucidations.

Koshy (2010) offers a valuable element to the reason of carrying out action research. He maintains that 'when we are employed in classroom research, we can be said to be employed in didactic speculating, because we are reflecting methodically and decisively on exercise' (p.30).According to McNiff (2013), action research entails learning in and through action and reflection, and is performed in a variety of circumstances.

Bradbury (2015) states that reflection comprises these steps: beginning from present knowledge; utilising participatory implements; control analysis; producing autonomous spaces; reflection-on-reflection; self-administration; and appreciation.

McNiff (2013) further states in action research, this means becoming conscious that we have an immense amount of individual awareness, realising the significance of it and accepting how to employ it to add to the welfare of individuals, creatures and the globe.



Wilson (2013) argued that reflection-in-action entails educationalists scrutinising, in retrospect, their own performance and trying to conclude how such performance impacts classroom proceedings. Reflection is connected to achieving better personal preparation through a conservative analysis of action.

After the informal oral assessment, I reflected on the performance of the participants in the different sub-assessments. I found that the participants were confident in the basic phonemic skills, but they found the auditory memory and the auditory cohesion sub-assessments very challenging. I worked out an intervention programme, concentrating on the auditory memory and auditory cohesion activities. I also made environmental changes, for example, when it becomes too noisy in the corridors, I waited until it quiet down before going on with the lesson or activities. I taught them different strategies to improve their auditory perceptual skills. During the intervention session, I reflected on how the participants reacted towards the activities/games, for example, what they enjoyed or struggled with. I gave them alternative activities/games.

Action research is a process founded on successive reflection and consequently the data collection processes employed within it tends to be flexible and developmental. The benefits of reflection in this research were to draw on alternative teaching strategies to help learners' with their auditory perceptual when familiar methods fail, to regularly evaluate approaches to teaching auditory perceptual skills, and to be more conscious of the significance of high-worth exchanges, together with planned involvement, remediation and meaningful auditory processing activities to maximise learners' auditory skills (Savin-Baden & Howell Major, 2013).

### **3.8 DATA ANALYSIS**

According to McNiff (2013), in analysing anything, some categories of analysis need to be identified, using identified criteria and standards to guide the choices. Quantitative and qualitative data may be used as appropriate. In action investigations, the researcher anticipates observing progressed education, so that progressed education turns out to be a measure; the researcher examines the information in recounting whether enhanced education and Schumacher (2010) states that analysis involves inductive analysis, narrative presentation of evidence and a diversity of visual representation which may include tables, charts, and integrative diagrams.

Wilson (2013) in addition, mentioned that the distinct benefit of mixing methods is '...verification, disconfirmation, cross-justification, or substantiation' (p.65) of information. The process is known as methodological triangulation, a term borrowed from map reading, where

a geographical location is found by reference to the length of one known side and two known angles. Wilson (2013) is of the opinion that triangulation of processes entails using diverse information-gathering mechanisms with the similar objects. This has the value of balancing the bias natural to any one process. One can argue that triangulation as a research device is particularly valuable in the case of introspective research, and it is also a useful strategy in strengthening the credibility of observational studies.

The data analysis of this project matched and displayed the answers of my research questions. I made up different categories that fitted the teaching situation. The auditory perceptual deficits were categorised according to the following themes and categories:

Table 3.2: Themes, categories and codes

Themes	Categories	Codes
Phonologic: Word discrimination Phonological Segmentation        Phonological blending	Phonological differences: Compound Words:   Syllables:   Phonemes:   Phonemic sounds: (synthesise)	<ul style="list-style-type: none"> <li>• Same or different</li> <li>• Delete ending syllables in words, delete beginning, syllables in words</li> <li>• Beginning syllable deletion, ending syllable deletion,</li> <li>• Beginning phonemes deletion, ending phoneme deletion, middle phoneme deletion</li> <li>• 2 phonemes to 11 phonemes</li> </ul>
Memory: Number Memory Forward Number Memory Reversed  Word Memory  Sentence Memory	Sequencing: Retain and manipulate sequences:  Retain and manipulate words  Retain details in sentences	<ul style="list-style-type: none"> <li>• 2 to 9 digits</li> <li>• 2 to 9 digits</li> <li>• 2 to 6 words</li> <li>• 2 to 11 parts</li> </ul>
Cohesion: Auditory Comprehension  Auditory Reasoning	Understand spoken language  Higher order linguistic	<ul style="list-style-type: none"> <li>• Performance in answering</li> <li>• Performance in answering</li> </ul>

I analysed the data in three different forms:

- According to my own critical reflection – I reflected on the participants' behaviour during the informal oral assessments and the intervention sessions. For example, were the participants nervous, or were they inattentive, or were they attentive during the assessment and the intervention sessions.
- According to the informal oral assessment results and observations - I reflected on the answers given by participants during the informal oral assessment and their behaviour, for example, were they nervous, or play with their fingers/objects.
- According to a critical friend -The feedback from the classroom educator or participants on their performance and the improvement of their auditory perceptual skills during lessons, in their workbooks and their reasoning skills (McNiff and Whitehead, 2011). She also assisted me by stepping out of the research to identify with what it is I am observing and undertaking (Herr and Anderson, 2015). The role of the critical friend is to generate the development of critical thinking and supporting me during the action-research process and make sure that I am constantly referring back to the process (Wilson, 2013). It is also vital to have several sorts of non-participant observation in order to get diverse viewpoints of what is taking place during my research (Hendricks, 2013).

### **3.9 VALIDITY**

Koshy (2010) claimed that one of the method of ascertaining validity, is to locate 'different resources of verification, such as organising for a co-worker to monitor as well, organising for acoustic or video footages, and enquiring other participants for their accounts' (p.98). He suggests triangulation for this reason, which he illustrates as the method of acquiring numerous standpoints or angles.

Hopkins (2002) as cited in Koshy (2010) also accentuates the position of triangulation in information assembling, 'as it entails different insights of one performer in a particular circumstance next to other performers in the equivalent circumstances' (p.98). By exploiting this, an original individual observation is fletched out and provides a level of validity (Koshy 2010).

Processes of validation therefore involve:

- Making claims;
- Identifying criteria and standards of judgement;
- Decisively investigating the arguments against a genuine verification base;

- Linking alternatives in justification processes (McNiff & Whitehead 2010).

McNiff and Whitehead (2010) state that validity in action research therefore involves several processes, which also involve other people in different ways, and works at the levels of:

- Individual justification in the light of an individual's personal advocated principles. I was able to change my own experience and quality of teaching. This involved considering the impact I had on the participants and educators by taking note of what possible auditory perceptual deficits participants experienced and what we as educators have to do to improve participants' auditory perceptual skills.
- Societal justification in the light of the critical opinion of alternatives. I had various discussions with the class educator on the behaviour of the participants regarding their listening skills and auditory perceptual skills to determine if there an improvement in their workbooks regarding their spelling and written work since the intervention sessions.
- Public legitimation which is an ongoing aspect social validation. This is the general public, educators, and academics, who would find my work useful by reading it, and using the strategies and ideas on auditory perceptual deficits, to inform their own lives. I discussed my research with my colleagues and urged them to apply the strategies for teaching auditory perceptual skills in their classrooms.

In the research I made use of gathering multiple perspectives on the issue from my colleagues, who have a stake in the problem. Multi-method strategies of data collection (observation, anecdotal notes, and informal assessment) were used in the research. As the educator/researcher I worked on the participants' cognitive level taking their learning disabilities in consideration.

Triangulation ensured that I considered the information from many different perspectives possible. Furthermore, it offered superior intensity and aspect, in that way improving my accurateness and reliability. Triangulation was accomplished by gathering diverse sorts of information (assessments; observational checklist; anecdotal notes; workbooks), using different data resources and collection of data at different times. I continuously compared what was done over a month (MacLean & Mohr, 1999).

### **3.10 ETHICAL CONSIDERATIONS**

Koshy (2010) outlined the following ethical considerations:

- Obtain consent from the participants. If a researcher is gathering information about learners, their parents need to be notified. A similar rule applies to equals and local education authorities. I obtained permission from the Western Cape Education Department, my principal, the parents/ guardians/ caregivers of participants, and the participants.
- Clarify the reason for the investigation. In action research the conclusions will mainly be used for enhancing facets of preparation and, consequently, there is less likelihood of opposition from participants. I explained to the parents, guardians, and the participants that the reason for this research was to explore the way in which auditory perceptual deficits affect learners' reading with the ultimate aim of suggesting strategies to address auditory perceptual deficits in learners with reading difficulties.
- Keep actual names and the individualities of participants confidential. I also promised not reveal the learners' names. I undertook not to reveal the learners' names. I used pseudo and did not mention the name of the school.
- Distribute information with contemporaries and others whose reactions are being examined so they can confirm the importance and truthfulness of what the account. I shared the different strategies I used to improve the learners' listening and auditory perceptual skills with my colleagues. I recommended some of the remedial auditory activities, environmental changes.
- If the researcher is aiming to establish fresh routines and introduce interventions with learners, their parents have to be told. I had a meeting with the parents, guardians, and participants explaining to them that I would set up intervention sessions in the first period of the day. I also mentioned that the intervention sessions would not interfere with their other subjects, because they would take place during our reading period.
- Be considerate of the sentiments and insights of both parents and learners. This is imperative if the intervention programme is intended to advance facets of schooling, as the learner participants may well be perceived to be privileged. This required making it obvious that the answers of an investigate experimentation would be to the advantage every one. I explained to the parents/ guardians and the participants that the findings would be used to improve auditory perceptual skills in all our schools in South Africa.
- Be as unobtrusive as possible in information gathering. Participants came to my class for thirty minutes. We did remedial activities to develop the participants listening and auditory perceptual skills. After the thirty minutes, I made my anecdotal notes. During the informal oral assessment, I wrote the participants' responses and behaviour in the margin of the assessment booklet.

- The information assembled and the changes made as the outcome of an investigation should be distributed to all the participants. After the research has been completed and approved by the university, I will share my conclusions with the participants, my contemporaries, and parents at a meeting.
- In investigating within society sensitive matters, make every effort to justify the reasons for the research with the participants. I clarified to the participants that I was carrying out the investigation to improve their auditory perceptual skills, listening skills, spelling and reading ability.

### **3.11 CHAPTER SUMMARY**

This section has provided a summary of a theoretical framework for research methods within this specific field. The research design of this study, approach that was employed in the study, data collection and analysis were fully described.

## CHAPTER 4

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION

#### 4.1 INTRODUCTION

This chapter describes the research project. It tells the story of how I assessed auditory processing skills as an educator. It shows how I used the results of the informal assessment, observation and anecdotal notes to enable me to plan the intervention program and what strategies educators can apply to minimise auditory perceptual deficits.

According to Koshy (2010), the spiral model can be used to identify with an exact concern contained by a learning environment and formulate enlightened conclusions during improved comprehending.

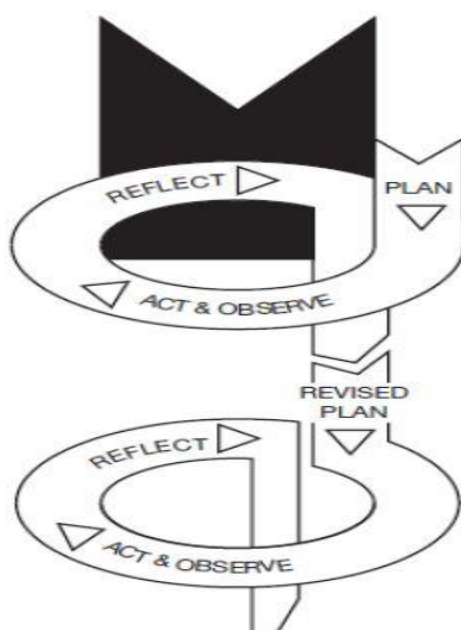


Figure 4.1 Action research spiral

(Source: Koshy, 2010)

I used a line graph to show trends over a period of time. I incorporated statistical data which provided the basis for the decisions I made about the teaching and learning of auditory perceptual deficits. The informal assessments along with the implementation of the exercises showed that achievement increased (or mistakes decreased) over time.

## **4.2 PHASE ONE, TWO AND THREE**

I conducted the informal assessment of Auditory Perceptual skills with the participants. The pre-assessment was done in February 2015 and the post-assessment was done in May 2015. The duration of the assessment was ninety minutes. Fifteen participants took part in the pre- assessment and fourteen participants took part in the post assessment. One participant dropped out of the research. The assessment was done in my classroom where I assessed the participants individually. All the assessments were done orally. The assessment covered the following areas of Auditory Perceptual skills: basic phonologic (word discrimination, phonological segmentation, phonological blending); memory (number memory forward, number memory reversed, word memory, sentence memory); and cohesion (auditory comprehension and auditory reasoning). The information was recorded in a booklet under these headings. I did the research because the participants and other learners tend to ignore verbal directions, seem to daydream, say huh or what at regular intervals, and are distracted by noise levels.

### **4.2.1 Activity 1: Basic phonological skills**

This activity consisted of three parts.

#### (a) Word Discrimination

This assessed the participants' ability to discern phonological differences and similarities within word pairs. The instruction: Close your eyes. I am going to say two words. For example, BIKE – BITE or COWS - COWS. You have to respond by saying if the words sound the same or different.

All the participants were able to discern the phonological differences and the similarities successfully. Two participants took longer than the other participants to respond. They repeated the words to themselves before responding.

#### (b) Phonological Segmentation

This assessment was designed to determine how well a participant could manipulate phonemes within words. I gave a word to the participants and they had to delete the syllables and phonemes as indicated below.

- (i) Compound words - (delete ending syllables in words) – Say COWBOY; now say it without BOY = COW; (delete beginning syllables in words) – Say COWBOY now say it without COW = BOY
- (ii) Syllables – (beginning syllable deletion) – Say FINISH; now say it without the FIN = ISH; (ending syllable deletion) – Say FINISH; now say it without the ISH = FIN



- (iii) Phonemes– (beginning phoneme deletion) – Say FLAP; now say it without the /f/ = LAP;  
 (ending phoneme deletion) – Say BEEF; now say it without the /f/ = BEE; (Middle  
 phoneme deletion) – Say LIFT; now say it without the /f/ = LIT.

The participants were able to delete the ending syllables in the words and responded correctly regarding beginning and ending phonemes. Eight of the participant struggled with middle phoneme deletion. For example, participants were given activities where say send, without /n/, response SED. Participants were given activities where they had to delete the middle phoneme, for example, belt, write it without the /l/ - bet.

Table 4.1: Results of middle phoneme exercise

Instruction	Required response	Participants' responses
Say send, without /n/	SED	sen, end or send
Say raft, without /f/	RAT	at and fat
Say land, without /n/	LAD	lan and land
Say limp, without /m/	LIP	lim and limp
Say went, without /n/	WET	went or wen

(c) Phonological Blending

This assessment was invented to establish how well the participant can blend a word presented the entity phonemes. t / u / b = tub; s / a / t = sat. I sounded the individual phonemes for the participants and they had to synthesise the phonemes.

Table 4.2 Results of synthesis of individual phonemes: pre-assessment and post-assessment performance and respond with a word.

PHONEMES	PRE-ASSESSMENT	POSTASSESSMENT
4 phonemes (e.g. g/l/a/d)	9 participants	2 participants
5 phonemes (e.g. s/c/r/ee/n)	5 participants	4 participants
6 phonemes (e.g. s/p/l/i/n/t)	3 participants	4 participants
7 phonemes (e.g.sh/i/p/m/e/n/t)	1 participant	3 participants

Participants showed a slight improvement in all the above phonologic areas. With more planned exercises, participants would become more self-assured and confident in the phonologic area.

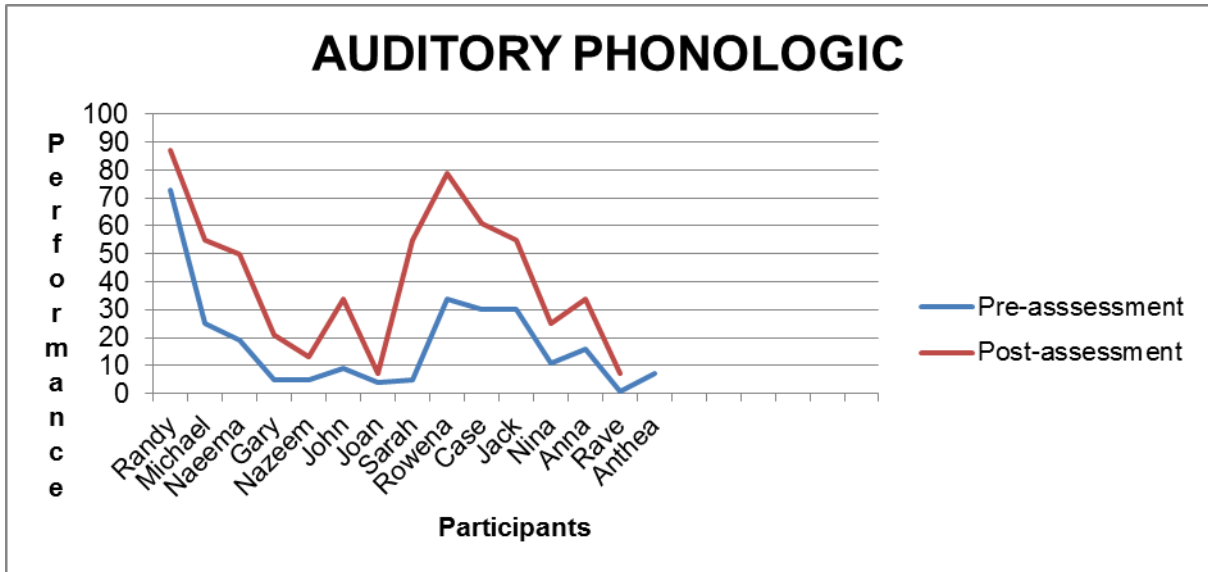


Figure 4.2: Phonological performance of participants before and after the intervention sessions.

#### 4.2.2 Reflection and intervention on basic phonological skills

Participants with insufficiencies in their fundamental phonological awareness abilities, may in turn show weak understanding, verbal communication, spelling, vocabulary, reading and written language. Their weak hearing may also have an effect on accomplishment in other areas of programme (Sound Skills, 2014).

##### (a) Word Discrimination

The participants were able to discern the phonological differences and similarities within word pairs. For example, coal and cold = different or diagram and diagram = same. In the intervention, we dealt with the discrimination of starting sounds, middle sounds, and ending sounds. The activities worked well where the participants had to underline the picture that started with a different sound. When they had to listen to the ending sounds in words, they found it challenging, for example, fell, tell, sell, beg or middle sounds – rub, gun, sun, man. After the intervention they were able to discriminate starting sounds, middle sounds and ending sounds.

##### (b)

##### Segmentation

##### Phonological

Participants were able to manipulate phonemes in compound words, and to delete the beginning and ending syllables (for example, compound words – snowball without ball =

snow; bedroom without bed = room; syllables – ribbon without the rib = on/bon; rapid without id = rap; phonemes – last without the l = ast, band without the d = ban, land without the n = lad). After the intervention sessions participants improved their performance by synthesising four phonemes (nine to two), five phonemes (five to four), six phonemes (three to four) and seven phonemes (one to four).

The pre-assessment showed that beginning and middle phoneme deletion was difficult and it is one of the problem areas I had to look at. Remedial exercises and games were used to develop the participants' listening and auditory perceptual skills. The post- assessment showed that participants improved their beginning deletion, but they still struggle with the middle phoneme deletion in words. The manipulation of the beginning sounds worked well, for example, say **oil**, but put a /s/ in front = soil. At the beginning of the intervention session they struggled with manipulation of the ending syllables, for example, say **mat**, but put a /ch/ at the end = match. They also found the manipulation of middle syllable deletion; for example, say **hunt**, but do not say the /n/ = **hut**.

(c)

#### Phonological Blending

The participants started struggling with synthesising of four phonemes to seven phonemes. None of the participants were able to synthesise nine to thirteen phonemes. During the intervention we played games and did exercises where participants had to synthesise of sounds in words, for example, l/o/ck = **lock**. They mastered the three to four phonemes during the intervention. The participants still found longer words challenging, for example, c/l/u/t/t/e/r and c/a/t/e/r/p/i/l/l/a/r.

#### 4.2.3 Activity 2: Auditory Memory

This assessment consisted of four parts.

(a) Number Memory Forward

This assessment was devised to illustrate how correctly the participant could retain easy successions of auditory information; for example, I'm going to say some sets of numbers. When I'm finished with each set, you going to repeat them back to me in the same order as you heard them. Listen carefully; I can't repeat them once we start. [347 = 347]. Participant had to repeat the sequence.

Table 4.3: Retention of number memory forward

<b>SEQUENCE</b>	<b>PRE-ASSESSMENT</b>	<b>POST-ASSESSMENT</b>
3 digits	2 participants	0 participants
4 digits	7 participants	3 participants
5 digits	6 participants	10 participants
6 digits	0 participants	1 participant

(b) Number Memory Reversed

This assessment was devised to demonstrate how well the participants could retain of and repeat easy successions of auditory information; for example, I'm going to say some sets of numbers; when I'm finished with each set, you repeat the numbers back to me in reversed order. Listen carefully; I can't repeat them once we start. [246 = 642]

Table 4.4 Retention of number memory reversed.

<b>SEQUENCE</b>	<b>PRE-ASSESSMENT</b>	<b>POST-ASSESSMENT</b>
2 digits	7 participants	2 participants
3 digits	6 participants	9 participants
4 digits	2 participants	1 participant
5 digits	0 participants	1 participant
6 digits	0 participants	1 participant

(c) Word Memory

This assessment was devised to demonstrate how correctly the participants could retain and repeat easy successions of auditory information; for example, I'm going to say some sets of words; when I'm finished with each set, you repeat them back to me. Words can't be repeated once the activity is started. For example, oar fence truck (3 words).

Table 4.5: Retention and manipulation of simple sequence of auditory information

<b>SEQUENCE</b>	<b>PRE-ASSESSMENT</b>	<b>POST-ASSESSMENT</b>
3 words	7 participants	5 participants
4 words	8 participants	8 participants
5 words	0 participants	1 participant
6 words	0 participants	0 participants

(d) Sentence Memory

This assessment was devised to demonstrate how correctly the participants could retain features in sentences when enhancing the span and grammatical difficulty. The sentences range from two parts to eleven parts. For example, I'm going to articulate several sentences; when I have finished each sentence, you repeat it back to me just as you heard it. I can't repeat them once we started, for example, the young kitten /is / playful (3 parts).

Table 4.6: Retention of details in a sentence and grammatical complexity

SEQUENCE	PRE-ASSESSMENT	POST-ASSESSMENT
4 parts	7 participants	5 participants
4 parts	7 participants	8 participants
5 parts	1 participant	0 participants
7 parts	0 participants	4 participants

After the intervention sessions the participants showed a slight improvement in the auditory memory area. Individual Educational Plans were worked out and given to the class educator to enhance the sequencing skills to ensure further improvement in the auditory memory area. Memory can also be improved by using meta-cognitive approaches, such as self-directive, grouping abilities (comprising inscribing things down and using a journal), problem solving, meta-memory approaches (comprising writing things and brain drawing), chunking, similarities and contractions, illustrative demonstration, and spoken practice / reauditorisation (British Society of Audiology, 2011).

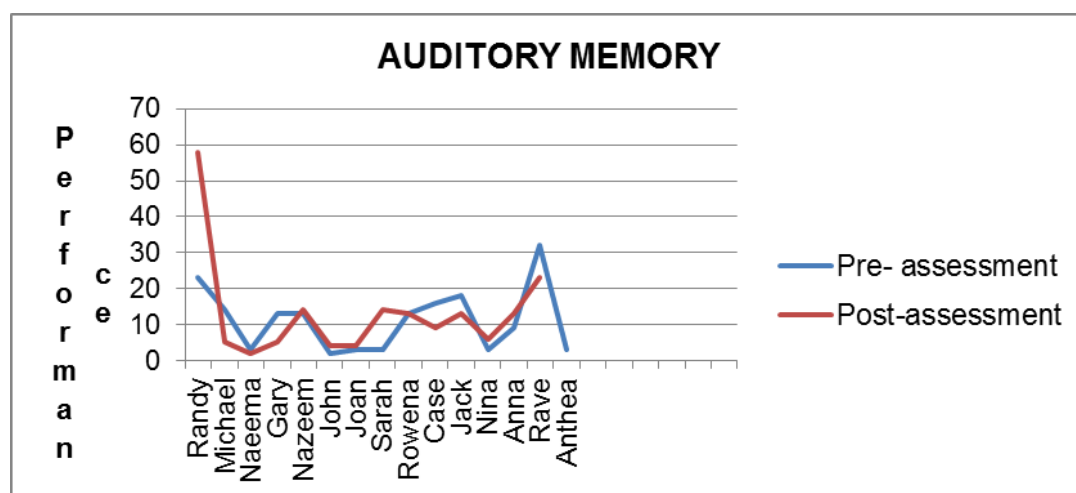


Figure 4.3: Auditory memory performance of participants before and after the intervention sessions.

#### 4.2.4 Reflection and intervention: auditory memory

(a) Number memory forward

The participants found it difficult to retain the sequence of digits starting from three to six digits. They were unable to retain a sequence of seven to nine digits. They repeated the sequence out loud and became confused. The exercise where the participants had to write down the telephone numbers; next to the pictures of different occupations, worked very well, for example, teacher: four, six, eight = 4-6-8. Every day we added a digit. The challenge came when there were more than five digits; for example, teacher: four, seven, nought, eight, six, three = 4-7-0-8-6-3. After the intervention sessions participants showed a slight improvement.

(b) Number memory  
reversed

The participants found it extremely difficult to manipulate simple sequences by reversing the digits. They took longer to respond, sometimes they just respond by saying they did not know. We did the same exercises as in number memory forward, the participants just had to reverse the digits. This exercise they found more challenging than the number memory forward.

(c) Word memory

The participants could retain two to three words easily. The exercise where the participants had to remember the words, and cross the right pictures out, worked very well, for example, pig, cat, horse. After each session we added a new word, for example, coat, fork, pot, hat, comb, fish. Some participants found the retention of more than three words challenging.

(d) Sentence memory

The participants could retain details in sentences which consisted of three parts. They started to find it difficult to retain details in sentences with four parts. All of the participants could not retain details of sentences that consisted of eight to eleven parts. These sentences were too long and the grammatical complexity was too difficult for them. The exercise where the participants had to listen to the sentence and tick the right picture worked well, for

example, Mary burnt the supper again. The participant had to choose one picture. Where they had to repeat my sentence, for example, the twins are very clever, or Mary and Jane are helping their mother to cook, it was too difficult.

#### 4.2.5 Activity 3: auditory cohesion

Auditory cohesion abilities describing conclusions from discussions, comprehending puzzles, or understanding vocal math difficulties entail sensitive auditory processing and verbal communication stages. This is when higher-level listening tasks are difficult (Morlet, 2014).

This part consists of two parts.

##### (a) Auditory Comprehension

This assessment was devised to demonstrate how correctly the participant comprehended verbal information. Instructions: Listen to what I'm going to tell you. When I'm done, I'll ask you some questions about what you just heard. I can't repeat once we started. For example, Sometime trees grow in rocks. Question – Where do trees sometimes grow? (in rocks) There were thirty-two questions in the auditory comprehension section. For every correct response participant were awarded one mark and when the response was incorrect they were given a zero.

Table 4.7: Auditory comprehension scores obtained

TOTAL POINTS SCORED	PRE - ASSESSMENT	POST – ASSESSMENT
6 points	1 participant	0 participant
8 points	0 participants	1 participant
11 points	1 participant	0 participants
16 points	2 participants	0 participants
19 points	0 participants	1 participant
20 points	1 participant	0 participant
21 points	1 participant	3 participants
22 points	2 participants	1 participant
23 points	3 participants	1 participant
24 points	1 participant	2 participants
26 points	2 participants	0 participants
27 points	0 participants	3 participants
28 points	0 participants	1 participant
29 points	0 participants	1 participant

(a) Auditory Reasoning

The auditory cohesion abilities for this assessment require elevated-order linguistic processing, and are shared to comprehending funny stories, puzzles, assumptions and notions. These pieces proposed to establish if the participant can comprehend inferred connotations, make suppositions, or arrive to reasonable endings providing the information in the sentence(s) offered. In the auditory reasoning section, there are thirty-four questions to be answered. Responses cannot simply be just a recurrence of the main phrases from the sentence. For example, Toby told Jake, “My kitten just said hello to me,” and Jake laughed. Question – Why did Jake laugh? Jake knows that kittens can’t talk.

Table 4.8: Auditory reasoning scores obtained

<b>TOTAL POINTS SCORED</b>	<b>PRE – ASSESSMENT</b>	<b>POST – ASSESSMENT</b>
1 point	2 participants	2 participants
2 points	1 participant	0 participants
3 points	1 participant	1 participant
4 points	2 participants	3 participants
5 points	2 participants	0 participants
6 points	2 participants	0 participants
7 points	1 participant	0 participants
8 points	1 participant	1 participant
9 points	1 participant	1 participant
10 points	1 participant	1 participant
11 points	0 participants	4 participants
16 points	0 participants	1 participant



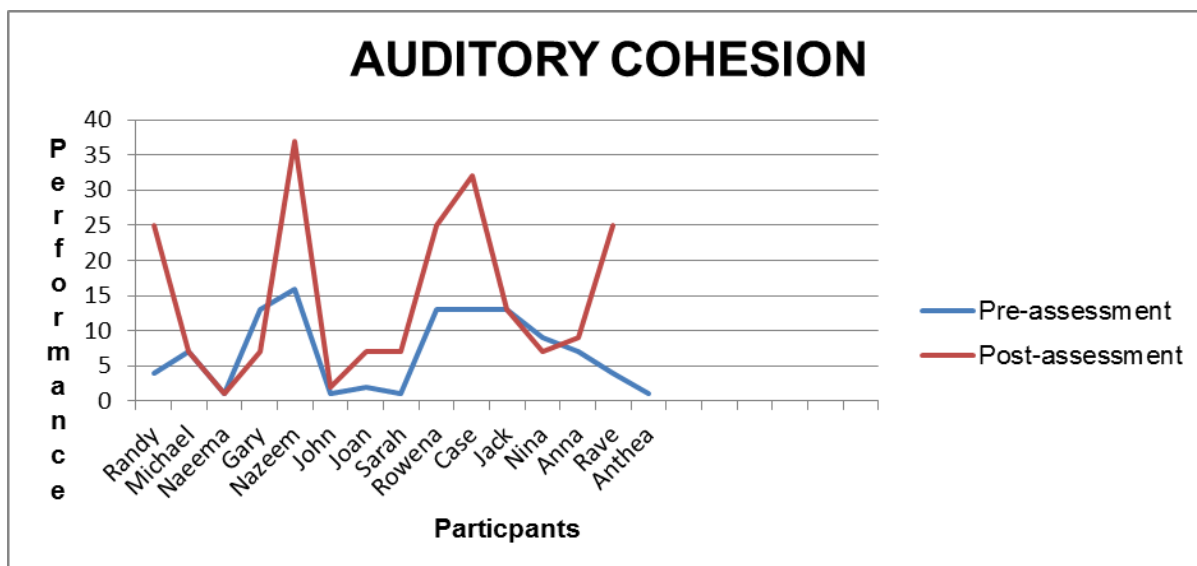


Figure 4.4: Auditory cohesion performance of participants before and after the intervention sessions.

#### 4.2.6 Reflection and intervention: auditory cohesion

Auditory cohesion transfers to higher-stage listening assignments, for example, suppositions from discussions, understanding puzzles or understand spoken maths. Every one of these needs advanced auditory processing and verbal communication skills. Auditory cohesion expands optimally when all the other abilities are undamaged (Educational Psychology Services, 2011).

The auditory cohesion assessments were difficult for most of the participants. They found it difficult when too much information was provided.

##### (a) Auditory comprehension

Short and simple comprehension activities were done, which they understood, for example, the days of the week. Here the participants had to give the answers to questions asked. What day is it today? Wednesday. What day comes after tomorrow? Friday. The answering of basic comprehension questions worked well. When the information was more detailed, they lost track of the detail in the comprehension. They could answer questions where answers were found in the first paragraph. After that the answering of the question became challenging.

##### (b) Auditory reasoning

The odd one out and similar reasoning activities', for example, apple, lemon, **car**, banana, they enjoyed and worked well. The forming of new words, were very challenging for them.

They had to find a word, which, when put at the start or end of each set of three words, makes three new words. For example, fall, bow, coat = rainfall, rainbow, raincoat.

Another challenging exercise was anagrams in a sentence. Participants had to rearrange the letters in capital to spell a word that completed the sentence in a sensible way, for example, the lion escaped from the **CSRICU** = CIRCUS. The improvement participants made after the intervention sessions were slight. If the intervention session were able to take place over a longer period, improvement might be better. Participants are able to improve when class educator apply the strategies and incorporate listening skills, activities and games in the lessons. Individual Educational Plans (IEP) was drawn up by the class educator to support the participants further.

### **4.3 PHASE FOUR**

Phase four addresses the observation of the research. The observation took a half hour during the intervention session and ninety minutes during the assessment. Anecdotal notes were made during the assessment. I looked at how the participants responded during the assessment and the intervention sessions. The aim of the observation was to assist educators to recognise auditory perceptual deficits and report or refer it to the various professionals (audiologists, speech and language therapist) and to apply strategies to enhance the different auditory perceptual skills. I divided my page in two parts. On the left hand side, I made detailed notes on my observations. On right side, I wrote the reflections of the behaviour of the participants I observed.

The pre- and post-observational checklist provided additional information in order to justify the observation. It indicated an improvement in the participants' workbooks. There was a decrease in spelling errors, their work was more organised and they followed directions more accurately. A slight improvement in their language and academic performance was noted. They encouraged their classmates to become better listeners. The pre- and post-informal assessment also showed a slight improvement in their performance. The information in the anecdotal notes showed that they responded faster during the post informal assessments. They became more self-confident.

I observed that participants improved overall in their listening skills: they looked at me during listening tasks; they refrained from touching or handling of objects; they refrain from making noise; after listening to a story or lesson, they were able to answer literal recall questions with accuracy; they waited until I had finished giving directions or instructions before attempting to complete tasks; they refrained from making a noise while classmates spoke

during discussions; they looked at the classmate speaking; they showed respect for opinions of other classmates by refraining from making negative or insulting comments, noises, or faces during class discussions. There were improvements in their work books, for example, there were fewer written errors and spelling improved.

#### **4.3.1 Basic phonemic skills**

During the assessment of the basic phonemic skills, I observed that participants performed best in the word discrimination and phonological segmentation. In the phonological segmentation they experience some difficulty in deleting the middle phonemes. In the phonological blending three participants struggled with synthesising words with five individual phonemes, seven participants struggled with synthesising words with six individual phonemes, two participants struggled with synthesising words with seven individual phonemes, and two participants struggled with synthesising words with nine individual phonemes. They were not nervous and were eager to answer the question. One girl was a little shy and was soft spoken, but she responded correctly to the questions and instructions.

#### **4.3.2 Auditory memory**

##### **(i) Number Memory Forward and Reversed**

In the number memory forward assessment, participants found it difficult to retain simple sequences of auditory information. Ten of the participants struggled with five digits and four of the participants struggled with six digits. With the number memory reversed assessment, participants found difficult to retain and repeat easy successions of auditory information. Errors were made from three digits onwards by giving sequences out of order, omitting, substituting or inserting digits.

##### **(ii) Sentence Memory**

During the observation I noticed that participants experience difficulties with long-term memory. During sentence memory, participants found it difficult to retain features in sentences of enhanced length and grammatical difficulty. Five participants struggled with sentences which consisted of four parts, seven participants struggled with sentences which consisted of five parts, one participant struggled with sentences which consisted of six parts and one participant struggled with sentences which consisted of seven parts.

(iii) Word Memory

The word memory showed how participants performed in retaining and manipulating simple sequences of auditory information. Participants omitted, substituted and gave the words in the wrong order. One participant struggled with three words, eleven struggled with four words and two struggled with five words. Participants also found it difficult to follow a succession of spoken directions. The participants also have a limited vocabulary which influenced their performance in the auditory comprehension and auditory reasoning assessment.

#### 4.3.4 Auditory cohesion

(i) Auditory Comprehension

The auditory comprehension assessment shows how well the participants understood the spoken information. The results were as follows:

Table 4.9: Results on auditory comprehension assessment

Number of learners	Percentage achieved
1	25%
1	59%
3	65%
1	68%
2	75%
3	84%
2	87%
1	90%

(ii) Auditory Reasoning

The auditory reasoning assessments required higher-order linguistic processing, and were included funny stories, puzzles, suppositions and generalisations. These are intended to establish if the learner could comprehend detailed connotations, make suppositions, or come to reasonable conclusions using the information in sentence/s offered.

Table 4.10: Results on auditory reasoning assessment

Number of learners	Percentage achieved
2	3%
1	8%
3	11%
1	23%
1	26%
1	29%
4	32%
1	47%

During the intervention they enjoyed the activities and games. The thirty minutes was sufficient and the participants did not get tired or distracted. They were more attentive and they did not interrupt their co-participants.

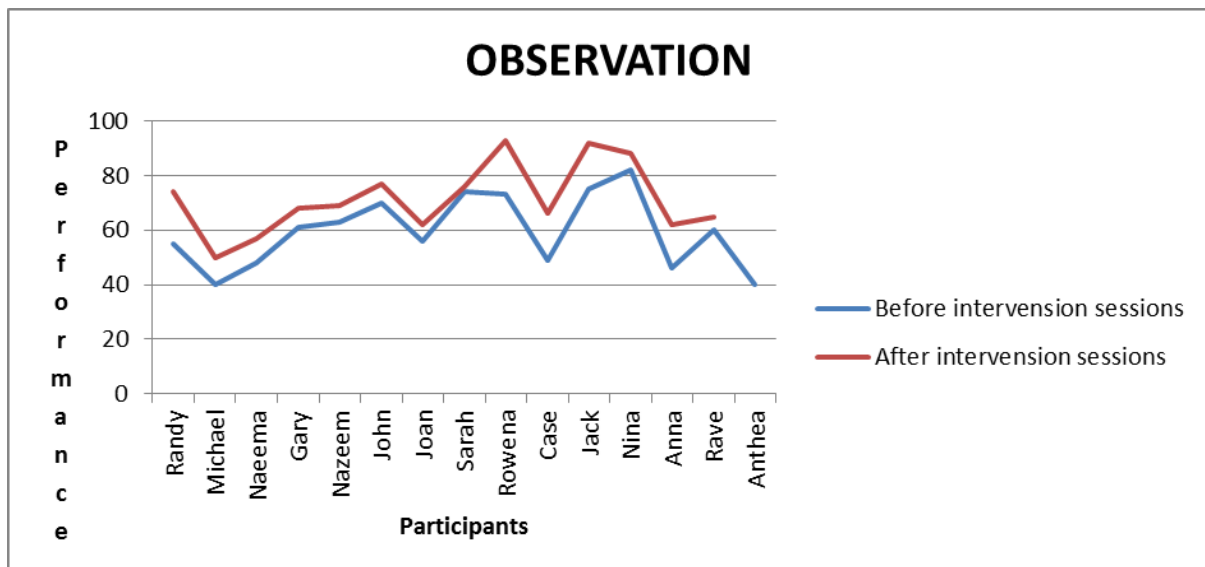


Figure 4.5 Observation before and after the intervention sessions.

My critical friend gave feedback on participants' performance and the improvement in their auditory perceptual skills during lessons, in their workbooks and their reasoning skills. She found that the participants were more attentive in class and they assist their classmates with different activities. Fewer spelling errors were made in their work books. Their listening skills showed improvement.

#### **4.4 CRITICAL REFLECTION**

During the informal oral assessment some of the participants took very long to answer the auditory memory and auditory cohesion activities. They found it difficult to repeat numbers and words in sequence. The participants' auditory reasoning skills were also weak. The memory and cohesion skills showed a very small improvement. These skills would improve when it class educator supports participants for this and the next year.

The intervention session and environmental modifications helped tremendously with the auditory discrimination and auditory phonological enhancements. The intervention had a positive effect on participants' communication/language abilities for learners with barriers to learning. The phonologic activities and exercises showed slight improvement in participants' language improvement. The top-down approach which focus on language. This approach would assist educators in classrooms when they apply it in their lessons.

Possible factors that could influence the results of the assessment were the participants' IQ levels, listening, attention problems, barriers to learning as well as the systemic barriers. The participants have different barriers to learning which could influence the results, for example attention deficits. With the result they couldn't concentrate for long periods at a time. Weak listening skills wouldn't allow them to listen at long, extended sentences and information. Systemic barriers - I did the assessment in a class that was not soundproof and noise level would influence their listening.

#### **4.5 CHAPTER SUMMARY**

In this chapter I gave a report on the auditory perceptual deficits learners can experience. Strategies and activities were explored. Furthermore, the contribution of my critical friend was included.

In the next chapter, a summary of the study is provided. The significance of the research and its potential implications are discussed.

## **CHAPTER 5**

# **DISCUSSION OF THE FINDINGS OF THE STUDY AND RECOMMENDATIONS**

### **5.1 OVERVIEW**

This chapter provides an overview of the study on auditory perceptual deficits at the school of skills where I work. It shows the significance of how my knowledge of auditory perceptual deficits will influence teaching learners with different learning styles, and how it will influence my colleagues.

The intention of the research was to recognise the auditory perceptual deficits learners at a school of skills experience, how it affects their reading, and how educators can assist and support learners with auditory perceptual deficits. Background information on the study, as stated in chapter 1, was provided in depth plus and a brief overview of the study plan and methodology was given.

This was followed by chapter 2, a literature review, which explored the concepts of auditory perceptual deficits. It addressed the admission policy of school of skills, definitions of auditory perceptual deficits, and the provision of support and management of auditory perceptual deficits.

In chapter 3, the research design was discussed. The plan was to use a mixed method approach using informal oral assessment, observations and anecdotal notes for data collection and analysis.

The performances in the different areas of auditory perceptual deficits were presented through graphs in chapter 4. This chapter provided the findings from the study. The limitations, critical reflection, recommendations are made in this chapter

### **5.2 SIGNIFICANCE OF THE RESEARCH AND ITS POTENTIAL IMPLICATION**

During the research, I learned that things can be changed and improved for the better. It changed my teaching style, especially to accommodate the learners with different learning disabilities and learning styles and a positive attitude. The participants or learners can flourish when an educator applies the right intervention in order to remediate learners with auditory perceptual deficits.

McNiff and Whitehead (2011) maintain that recent knowledge has supplied renewed interest in action research which has in turn created fresh knowledge. This is an incomplete progression and will continue into the future. Foucault and Ngumbe as cited in McNiff and Whitehead (2011) stated that action research implies that 'The main interest in life and work is to become someone else you were not in the beginning' (p.173). I discussed and talked about auditory perceptual problems and the different strategies how to improve auditory skills with some of the educators at my school and how active listening can play an important role in positive learning. We also had discussions about the social, political, and economic backgrounds of the learners we teach and how this influenced the learners' academic performance.

McNiff and Whitehead (2010) highlighted the significance of recognising the societal, political, financial and other influences. This means talking with people, and showing your awareness of your own learning and how you might influence them. Two of my colleagues also started with their Master's degree in Education. It is really a significant experience to see how you, as an educator can influence your colleagues and learners.

The study can make contributions in improving learners' auditory perceptual skills and listening skills in all schools of skills, the Western Cape Education Department (WCED) and the Department of Education as a whole.

### **5.3 LIMITATIONS OF THE STUDY**

#### **5.3.1 Number of participants**

The research was done with only fifteen, English speaking, participants from the first year group at a school of skills. Eight of the fourteen year participants were boys and seven were girls. One girl dropped out of the research due to absenteeism. The research findings were limited to these participants only.

#### **5.3.2 The research site**

The research was conducted at a school of skills, which is situated in the Northern Suburbs of Cape Town. The school has two hundred and ten learners. It caters for learner with mild to moderate intellectual disabilities. The learners at the school have different learning and intellectual disabilities. The research was only conducted in one school.

#### **5.3.3 Generalisation of findings**

My research findings cannot be generalised because it was conducted in one school with a limited number of learners. Auditory perceptual deficits are a common challenge amongst



learners with mild intellectual disability. The research was only conducted within my situation and within the context of my work and my beliefs (Koshy, 2010). I could only assume that an auditory-precise shortfall causes considerable learning inconvenience, comprising definite reading and language difficulties, which is found in learners, in mainstream schools, and school of skills (special schools). Educators can use an observation behaviour checklist to detect auditory perceptual deficits and apply the different strategies from the research to enhance the auditory perceptual deficits. They can refer the learners to the different professionals who can assist them to enhance the auditory perceptual skills. The information can better prepare and inform educators on auditory perceptual deficits.

#### **5.4 CRITICAL REFLECTIONS**

One of the major limitations I experienced was the lack of informal assessments of auditory perceptual deficits for the specific age group I did the research with. The Pendulum test, which is available, is very old. Most studies were done internationally. There is a challenge with the eleven official languages, which means that the test could not be done with language group, other than English. The assessments are very expensive and they are not culturally suitable for learners in the South African context. Most of the assessments were standardised according to American standards. They are very time consuming because it's done individually. Khan (2006) and Lewis (2014) state that all children need to be addressed, assessed and managed at an individual level, in their language and within their context and environment. Referral forms specifically for auditory perceptual deficits do not exist, but general forms for learning disabilities are used.

Learners identified with a mild intellectual disability (MID) on the basis of a psycho-learning appraisal would probably shows cores beneath the usual variety on a multiplicity of assessments of auditory perceptual. Nevertheless, the problems with the cognitive, memory and language processing requires understanding the directions and finishing the assignments connected with MID. It may explain poor results and do not indicate auditory perceptual deficits (CSIG, 2012).

The question was also what type of intervention would be the most effective for an educator to use. According to Patrusky (2013), exploration outcomes in this discipline mainly comprise processes to get better at listening in the classroom surroundings, but do not particularly discriminate between CAPD or children with barriers to learning.

## **5.5 CONCLUSIONS**

### **5.5.1 Contributions to my personal professional learning**

Action research is a type of investigation that allows specialists in each occupation and walk of existence to look into and appraise their occupation. They generate their explanations of work to demonstrate: (a) how they are attempting to develop what they are accomplishing, which entails initial opinion concerning and education how to do improved; and (b) how they attempt to empower others to do the similar thing. These explanations stand as their own sensible presumptions of profession, from which others can study if they desire (McNiff & Whitehead, 2011).

The investigation and reflection helped me with my professional growth as a special needs educator. I gained confidence and skills in teaching learners with auditory perceptual deficits. It also helped me to determine ways to improve different teaching strategies and methods. I held myself accountable for the change and improvement of learning that the learners experienced.

### **5.5.2 Contributions to the professional learning of others in my institution**

The research allowed time to share my experience with my colleagues about the teaching styles and the teaching strategies. I applied it in my classroom and how the auditory perceptual skills helped the learners to improve academically. My research sparked debates about inclusive education and strategies to assist learners with auditory perceptual as a learning barrier at school. My contribution motivated change for improvement's sake at our school. When action research became a part of our schools' culture we see increased sharing and collaboration across the academic and skills side. I evaluated myself by looking at my own teaching style in a structured manner. The ways I had to change my instruction techniques to go well with the learning techniques of learners. The changes and improvement learners experienced, helped them in their different academic subjects, in class and would assist them in further studies. Auditory perceptual deficits may be a common problem shared by many classrooms at our school, and the research could be the answer in minimising the auditory perceptual deficits. The research showed learners that they are responsible for their own improvement, academically and socially.

### **5.5.3 Contributions to the larger body of knowledge**

It can add to the larger body of awareness which is: other schools of skills, mainstream schools, the Department of Education and educators. I have enhanced the value of specialised learning in my classroom and my place of work, so I anticipate also to persuade the larger society, I mentioned above. I am aware of my personal ability to persuade others both in neighbouring and larger environments, and I mean to take each opportunity to share my knowledge in my desire and concern to advance teaching in schools (McNiff & Whitehead, 2002). I will use my knowledge on auditory perceptual deficits to influence schools of skills, mainstream schools, educators and the Department of Education through sharing of my knowledge. I will encourage them to believe in their capacities. My capacity for communicative action will enable them to develop the same capacity (McNiff, 2013).

### **5.6 RECOMMENDATIONS**

A larger, more diverse sample of participants from different schools would offer more information for future research, for example, different type of schools, in different districts and provinces. Whole class groups could make use of activities for enhancing auditory perceptual skills, listening skills, and language improvement skills. Schools could apply different environmental changes, compensatory strategies and direct training that will help with the intervention and support of auditory perceptual deficits.

A multi-disciplinary approach is suggested, mainly when coexisting disorders are detected. Preferably, dedicated auditory perceptual deficits treatment centres together with specialists such as psychologists, speech and language therapists, educational audiologists/educators of the hearing-impaired and paediatricians as well as audio-logical professionals working together would best support this group of learners. Determining whether auditory perceptual deficits are the main disorder possibly will be helpful in shaping the focal point of the intervention and assist in prioritise the different components and direction of carrying out thereof. Intervention concentrating solely on auditory perceptual might not be all that is required and intervention should be supported with integrated, multi-disciplinary approach (Witton, 2010).

The design of educational software, in auditory perceptual activities is to assist learners in the classroom. It is important that all eleven languages must be accommodated, and it must be cost effective so that all the school can buy the software.

## **5.7 FINAL REFLECTIONS**

As the result of my studies and growth, I was appointed as Head of the Academic Department, in August 2015, at my school. I served in the School Based Support Team (SBST), where I was responsible for learner referral to the learner support educator, depending on the severity of their learning disabilities. The learner support educator comes to our school twice a week to support some learners with reading and mathematics difficulties. I, however, am responsible for identifying and supporting learners with auditory perceptual deficits. The preparation of the Progression and Promotion Schedules of the school, and the working out the learner achievement statistics are part of my responsibilities.

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## LIST OF APPENDICES

### APPENDIX A: REQUEST TO CONDUCT RESEARCH

XXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXX  
7580

16 October 2013

The Head: Education

Western Cape Education Department

Private Bag X9114

Cape Town

8000

Dear Madam / Sir

#### REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT A SCHOOL OF SKILLS IN THE METROPOLE NORTH DISTRICT, WESTERN CAPE

This is a correspondence to appeal for authorisation to carry out an investigation in a special school (school of skills) in the Northern suburbs of Cape Town.

I am a master's student at UNISA, my research proposal is titled: Strategies to address auditory perception problems at a school of skills in the northern suburb of Cape Town. I need to do observation, informal assessment and anecdotal notes at a school of skills.

As per procedure, permission is required by the Western Cape Education Department (WCED) to carry out an investigation in schools. Therefore, I would like to gently ask for consent to conduct my study, **Strategies to address auditory perceptual deficits in a school of skills in the Northern Suburbs of Cape Town**. The objectives of the study are to explore ways in which educators can assist learners with auditory perceptual deficits; to identify the auditory perceptual deficits learners struggle with; and to suggest ways in which educators can apply to support learners with auditory perceptual deficits with an aim of improving their academic performance.

Yours sincerely

Jacqueline Jacobs

Email:

Cell:

## **APPENDIX B: REQUEST TO CONDUCT RESEARCH AT THE SCHOOL OF SKILLS**

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

7580

THE PRINCIPAL

Title: Strategies to address auditory perceptual problems in a School of Skills in the Northern Suburbs of Cape Town.

I am Jacqueline Jacobs, a Master's Degree postgraduate student at the University of South Africa (UNISA). I'm carrying out research on Inclusive Education under the supervision of Mrs. Nonhlanhla Maseko at UNISA. The Western Cape Education Department has given approval to do my research at XXX School of Skills. This investigation will satisfy the prerequisites of the Research Ethics Committee of UNISA.

The study intends to: understand the mayor auditory perceptual problems; understand how educators can assist learners with auditory perceptual problems; understand ways in which educators can apply different classroom management strategies to improve learners with auditory perceptual deficits.

The research is significant in three ways:

- What major auditory perceptual problems learners experience?
- How do educators assist learners with auditory perceptual problems?
- What instructional strategies and classroom management can educators apply to assist learners with auditory perceptual skills?

The school will benefit in the following ways: dissemination to schools, Western Cape Education Department and the wider community; the results will be conveyed to educators how to manage the classrooms and different strategies to apply when teaching auditory perceptual skills/ activities.

Authorisation will be sought from the learners and their parents/ guardians preceding their involvement in the study. Individuals who give approval and whose parents approve will take part. The educator-researcher/psychologist/professional will do a pre-and post-test at the beginning of the research. Data will be collected in the form of observation, informal oral assessment and anecdotal notes. Every morning in the first period the educator-researcher will do auditory perceptual activities with learners.

All information gathered will be treated in strictest confidence and neither the institution nor single learners will be pinpointed in any accounts that are in print. Participants may withdraw from the research at any time without consequence. The function of the institution is voluntary and the School Principal may decide to cancel the institution's involvement at any time.

I will: organise for informed consent document to be obtained from participants' parents; plan an occasion with your institution for information gathering to take place; and attain informed consent from participants.

I would appreciate your assistance in achieving my objective. I would like to obtain accountability for my own proficient growth and add to the growth of the establishment.

You are welcome to contact my supervisor, Mrs. Nonhlanhla Maseko at 012 481 2783 ([maseknd@unisa.ac.za](mailto:maseknd@unisa.ac.za)), if you require more information.

Yours faithfully

.....

(Jacqueline Jacobs)

(Student Number)

Date: .....

## APPENDIX C: INFORMED CONSENT FROM PARENTS

XXXXXXXXXX

XXXXXXXXXX

7580

Title: Strategies to address auditory perceptual problems in a School of Skills in the Northern Suburbs of Cape Town.

Dear Parents/ Guardians

I'm a postgraduate student at the University of South Africa, and am currently registered for the structured master's degree in education.

As instructed to finish the requests for the module, I have to become accustomed with different facets in my discipline of specialisation. This means that I have to do research in certain areas, which requires cooperation from a parents/ guardians of learners in a school. I would wish to incorporate your child, with about 15 of his or her classmate, in a study assignment about auditory analysis. If your child partakes in this assignment, each morning of your child's regular first lesson will be occupied learning about auditory analysis skills, 30 minutes per day over a period of four months. A learner who doesn't partake will do other lessons for this period.

Your child's involvement in this assignment is totally voluntary. If you consent, your child will also be requested if he or she would like to partake in this assignment. Those learners who have parental authorisation and who wish to partake will do so, and any learner may withdraw at any time. You are free to withdraw your consent for your child's participation at any period and for any grounds without consequence. These choices will have no influence on your upcoming association with the school or your child's standing or years there.

The data that is acquired throughout this study venture will be remained confidential. Any publication of the document will not name any one of the participants by their given name.

On the form at the far end of this correspondence, please indicate whether you **do** or **do not** want your child to partake in this assignment and send this message to your child's educator before.....Please retain a copy of this document for your records.

I am looking forward to working with your child. I believe that my study will be meaningful for the learners who partake and will assist them to discover how to decode their words, sentences, etc. which will help them with their reading.

If you have any enquiries concerning this assignment, please get in touch with me by means of the information below. If you have any concerns, please contact my research supervisor, Mrs. Nonhlanhla Maseko at 012 481 2783 (maseknd@unisa.ac.za).

Thank you for assisting me to arrive at my objective. I like to be accountable for my personal specialised growth and add to the improvement of the school as a whole.

Yours sincerely

.....

(Ms. J. Jacobs) (Student Number)

.....

I **do** / **do not** (circle one) grant authorisation for my child

.....

(name of child) to partake in the study assignment explain above.

Print Parent's/ Guardian's name

.....

(Parent/Guardian)

(Date)

.....



## **APPENDIX D: LEARNER'S INFORMED CONSENT**

### **Research Assent Form**

Title: Strategies to address auditory perceptual deficits in a school of skills in the Northern Suburbs of Cape Town.

### **What is an investigation?**

Investigations assist us to find out fresh stuff. We experiment fresh information. Initially, we pose an enquiry. Next we seek to uncover answers.

This document speaks with reference to our investigation and the preference that you have to partake in it. We want you to enquire which ever issues that you have. You can pose queries any time.

### **Significant things to know...**

- You get to make a decision if you wish to partake.
- You can 'refuse' or you can 'agree'.
- Nobody will be offended if you 'refuse'.
- If you 'agree', you can always 'refuse' afterwards.
- You can 'refuse' whenever you want to.
- We would still look after you no matter what you decide.



### **Why are we undertaking this investigation?**

We are performing this investigation to discover new ideas about developing auditory perceptual skilfulness.

### **What would occur if I adhere to this investigation?**

If you choose to be in the study, we would request to you to in pursuing:

- Assessment: Pre- and post-assessment on auditory perceptual skills.
- Auditory perceptual activities, games, etc.

### **Could terrible things occur if I participate in this investigation?**

Some of the assessments might make you unpleasant or the enquiries might be difficult to respond to. We will attempt to make certain that no awful things occur.

You can 'refuse' to what we enquire you to do for the investigation at whenever you want and we will discontinue.

### **Could the investigation assist me?**

We believe being in this investigation may possibly aid you for the reason that:

- It will develop your auditory perceptual skills,

- It will develop your spelling,
- It will develop your reading ability.

**Is there something in addition?**

If you desire to be in the investigation following we're having a conversation, please put it in writing by writing your name underneath. write my name too. This confirms we had a discussion about the investigation and that you desire to partake.



I will

Name of Participant: .....

(To be written by child/teenager)

Printed name of Researcher: .....

Signature of Researcher: .....

Date: ..... Time: .....



## APPENDIX E: PRE/POST OBSERVATIONAL CHECKLIST

LEARNER: .....

Key

0 – never	1 – occasionally	2 – sometimes
3 – often	4 – usually	5 – nearly all/all the time

	PRE	POST
➤ During listening tasks, learner(s) looks at the educator.		
➤ During listening tasks, learner(s) refrain from touching or handling nearby objects.		
➤ During listening tasks, learner(s) refrains from making noise.		
➤ When alerted to the educator, learner(s) promptly attends.		
➤ Learner(s) refrains from making noise while classmates speak during discussions.		
➤ Learner(s) looks at the classmate speaking during class discussions.		
➤ Learner(s) shows respect for the opinions of other classmates by refraining from making negative or insulting comments, noises, or faces during class discussions.		
➤ Learner(s) waits patiently while classmates speak, refraining from waving his/her hand or interrupting.		
➤ Learner(s) appropriately adjusts the noise level in the classroom depending on the nature of the activity.		
➤ Learner(s) initiates action to reduce the noise level in the classroom when distracted.		
➤ Learner(s) keep his/her focus on the person speaking, despite environmental noise distractions.		
➤ Learner(s) remembers new words with accuracy.		
➤ Learner(s) waits until the educator has finished giving directions before attempting to complete a task.		
➤ Learner(s) follows oral directions with accuracy.		
➤ Learner(s) write directions, assignments or lecture notes effectively to facilitate recall as needed.		
➤ Learner(s) initiates asking for clarification when confused about what was said.		
➤ Learner(s) makes appropriate follow-up comments when participating in class discussions.		
➤ Learner(s) attends to classmates' comments, and adjust responses to avoid redundancy..		
➤ Learner(s) refrains from interrupting class discussion with stories or comments about personal, off-topic issues.		
➤ After listening to a story or lecture, learner(s) answer literal recall questions with accuracy.		

<b>Total score before program</b>		<b>Total score after program</b>	
-----------------------------------	--	----------------------------------	--

(Hamaguchi, P (2000) *It's Time to listen*)

Educator's signature: .....

Date: .....

## **APPENDIX F: STRATEGIES TO ASSIST LEARNERS WITH AUDITORY PERCEPTUAL DEFICITS IN READING:**

Bellis (2003:349) states regardless of these unfamiliar, nonetheless, plain common sense (as well as accessible study on neuro-composition, neuro-flexibility, and information processing) states that the majority successful straight treatment methods will be those that are (i) regular, extreme, and daring; (ii) entail vigorous commitment and partaking on the component of the listeners; and (iii) mark the exact auditory deficit(s) at hand. Also, the lessons of deficit-exact compensatory abilities that are the spotlight on the exercise of these essential auditory processes in verbal communication understanding will assist to link the break among bottom-up and top-down processing intensities and improves implication of abilities learned to genuine-global listening settings. (HearBuilder 2009:32)

HearBuilder Phonological Awareness targets nine crucial auditory analysis/phonological awareness exercises comprising:

- Sentence Segmentation – the capability to recognize words as detach components;
- Syllable Blending – the capability to pay attention to verbal syllables and unify them jointly to create a word;
- Syllable Segmentation – the capability to recognize syllables as detach components of a word;
- Rhyming – the capability to recognize and classify assonance;
- Phonemic Awareness – the capability to recognize, examination, and influence the tiniest component of verbal communication composition.
- Phonemic Blending – the capability to pay attention to detach phonemes, and combine them jointly to build a word;
- Phoneme Segmentation and Identification – the capability to recognize phonemes as detach components inside a word;
- Phoneme Deletion – the capability to remove a phoneme from a word to build a new-fangled word;
- Phoneme Addition – the capability to insert a phoneme to a word to build a new-fangled word;
- Phoneme Manipulation – the capability to replacement a single phoneme in a word for a different phoneme to build a new-fangled word.(HearBuilder 2009:32-33)

**Campbell (2010) suggests these useful instructions and procedures for developing phonological awareness:**

- Begin with simpler chores prior to undertaking more difficult ones!
- Consider the next procedures:
  - ✓ The magnitude of the phonological component (e.g.: it is simpler to split sentences into words and words into syllables, than to split syllables into phonemes);
  - ✓ The amount of phonemes in the word (it is simpler to split phonemically smaller words such as “cat” than “sheep”);
  - ✓ Phoneme location in words (first consonants are simpler than final consonants and middle consonants are generally complex);
  - ✓ Phonological possessions of words (continuants such as /s/ and /m/ are simpler than extremely short sounds such as /t/);
  - ✓ Phonological awareness tests (assonance and first phoneme recognition is simpler than combining and division) (BSA 2011:56).

## APPENDIX G: SAMPLE INDIVIDUAL EDUCATION PLAN

### INDIVIDUAL EDUCATION PLAN

<b>REASON FOR DEVELOPING THE IEP</b>			
Auditory Perceptual Skills			
<b>LEARNER PROFILE</b>			
Last name: Learner 1 First name:			
Gender: Male		Date of birth: 2000/11/17	
School: XXX School of Skills	Term: 1	Educator: Ms. Jacobs	
School type: LSEN			
School Year: 2015		SOS Year: 1D	
Exceptionality (Identified): Auditory Perceptual Problems			
<b>RELEVANT ASSESSMENT DATA</b>			
<b>Information Source</b>	<b>Date</b>	<b>Sum of Scores</b>	
Informal Assessment (Pre-)	2015/02/23	75	
Informal Assessment (Post-)	2015/02/09	98	
<b>LEARNER'S REGIONS OF STRONG POINT AND REGIONS OF REQUIREMENTS</b>			
<b>Regions of Strong Points</b>		<b>Regions of Requirements</b>	
Word Discrimination		Number Memory Forward	
Phonological Segmentation		Number Memory Reversed	
Phonological Blending		Word Memory	
Auditory comprehension		Sentence Memory	
		Auditory Reasoning	
<b>TOPICS, PROGRAMMES OR SUBSTITUTE ABILITY REGIONS TO WHICH THE IEP RELATES</b>			
Accommodated only (AC), Modified (MOD), Alternative (ALT)			
	<b>AC</b>	<b>MOD</b>	<b>ALT</b>
1. Word & Sentence Memory	√		
2. Number Memory Forward & Reversed	√		
3. Auditory Comprehension	√		
4. Auditory Reasoning	√		

<b>ACCOMMODATIONS FOR LEARNING</b>		
<b>Instructional Accommodations</b>	<b>Environmental Accommodations</b>	<b>Assessment Accommodations</b>
Visualise lessons	Move learner away from noisy areas	Allow extended time
Reduce distractions	Move learner near to educator	Avoid fatigue
Speak in clear and modulated voice	Sound tune classroom if necessary	Give adequate response time
Alert learners before giving instructions	Close windows and doors	Amanuensis
Reduce motor activities during instruction	Avoid open classrooms	
Identify key words	Record instructions	
<b>LONG-TERM GOALS</b>		
<b>Actions</b>	<b>Person(s) Responsible for Actions</b>	<b>Timelines</b>
Listening activities	Ms. Hendricks	1 – 2 years
Auditory Reasoning activities	Ms. Hendricks	1 – 2 years
Auditory comprehension activities	Ms. Hendricks	1 – 2 years
Number Memory Reverse & Forward activities	Ms. Hendricks	1 – 2 years
Word & Sentence Memory activities	Ms. Hendricks	1 – 2 years

Researcher: Ms. J. Jacobs

Date: 15-04-2015

Classroom Educator: .....Date: .....

Principal: .....Date: .....

## APPENDIX H: SAMPLE OBSERVATION SCHEDULE

OBSERVATIONAL SCHEDULE	
Learner: Case	Date: 02/02/2015
<p><b>Observation:</b> Case made a lot of spelling errors in his language workbook. He asked educator to repeat instructions on a regular basis. He disrupted his classmates when they gave answers. Sometimes he is daydreaming in class. Sometimes he looks at the educator when she is teaching. When he is alerted to the educator, he responds quickly. He sometimes refrains from making a noise, when educator speaks. He occasionally keeps his focus on the educator / person speaking, despite the environmental noise and distractions.</p> <p><b>Phonological Skills:</b></p> <ul style="list-style-type: none"><li>(a) Word discrimination He can discriminate between word pairs – similarity or difference.</li><li>(b) Phonological Segmentation He can delete beginning syllables, but find middle and ending syllables difficult.</li><li>(c) Phonological Blending He can synthesise words with 5 phonemes, but struggles with 6 phonemes.</li></ul> <p><b>Auditory Memory:</b></p> <ul style="list-style-type: none"><li>(a) Number memory forward He can retain sequencing of 4 digits, struggles with 5 digits. Memorising digits by repeating the sequence before answering. He gets confused.</li><li>(b) Number memory reversed He finds this exercise more difficult. He can only retain and manipulate 2 digits.</li><li>(c) Word memory He can repeat 5 words in sequence. Struggles with 6 words.</li><li>(d) Sentence memory He can repeat a sentence with 3 parts, but find a sentence with 4 parts difficult.</li></ul> <p><b>Auditory Cohesion:</b></p> <ul style="list-style-type: none"><li>(a) Auditory comprehension He can answer questions where the information/detail consists of two sentences. He finds it difficult to answer questions where the detail is too much.</li><li>(b) Auditory reasoning He finds it difficult to reason and could not do this exercise.</li></ul>	
<p>Future planning:</p> <ul style="list-style-type: none"><li>• Remedial activities and games on auditory perceptual skills.</li><li>• Enforcing listening skills.</li><li>• Make APD part of language lessons.</li></ul>	



- IEP
- Environmental changes

Observer:  
Date: 03/03/2015

## APPENDIX I: PERMISSION LETTER



[Audrey.wyngaard2@pgwc.gov.za](mailto:Audrey.wyngaard2@pgwc.gov.za)

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

**REFERENCE:** 20131114-20688

**ENQUIRIES:** Dr A T Wyngaard

Ms Jacqueline Jacobs

**Dear Ms Jacqueline Jacobs**

### **RESEARCH PROPOSAL: STRATEGIES TO ADDRESS AUDITORY PERCEPTUAL PROBLEMS IN A SCHOOL OF SKILLS IN THE NORTHERN SUBURBS OF CAPE TOWN**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **03 February 2014 till 30 September 2014**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services  
Western Cape Education Department  
Private Bag X9114  
CAPE TOWN  
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

**Directorate: Research**

**DATE: 14 November 2013**

## **APPENDIX J: TURN-IT-IN REPORT**

Turnitin Originality Report

Dissertation by Jacqueline Jacobs

From Dissertation (Masters Coursework)

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## APPENDIX K: DECLARATION OF PROFESSIONAL EDIT



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16 April 2016

#### Declaration of professional edit

**STRATEGIES TO ADDRESS AUDITORY PERCEPTUAL DEFICITS IN A SCHOOL OF SKILLS IN THE NORTHERN  
SUBURBS OF CAPE TOWN**

by  
**JACQUELINE ROSE JACOBS**

I declare that I have edited and proofread this thesis. My involvement was restricted to language usage and spelling, completeness and consistency, referencing style and formatting of headings, captions and Tables of Contents. I did no structural re-writing of the content.

Sincerely,

Dr Jacqueline Baumgardt  
Member, Professional Editors Guild

**APPENDIX L: SAMPLE OF CODING**

<b>CODING</b>		
<b>THEME</b>	<b>CATEGORIES</b>	<b>CODES</b>
<b>LISTENING</b>	Refrain from	<ul style="list-style-type: none"> <li>➤ Interrupting class discussions</li> <li>➤ Handling objects</li> <li>➤ Making a noise</li> <li>➤ Making negative comments</li> <li>➤ Distracting classmates</li> </ul>
	Noise level	<ul style="list-style-type: none"> <li>➤ Adjusting level, depending on activity</li> <li>➤ Reducing level when distracted</li> <li>➤ Keep focus on person speaking despite environmental noise</li> </ul>
	Recall with accuracy	<ul style="list-style-type: none"> <li>➤ Oral directions</li> <li>➤ Story - answers literally</li> <li>➤ New words</li> <li>➤ When needed</li> <li>➤ Wait for finished directions before completing task</li> </ul>
	Comments	<ul style="list-style-type: none"> <li>➤ Appropriate follow-ups</li> <li>➤ Adjust responses to avoid redundancy</li> <li>➤ Ask for clarifications</li> </ul>